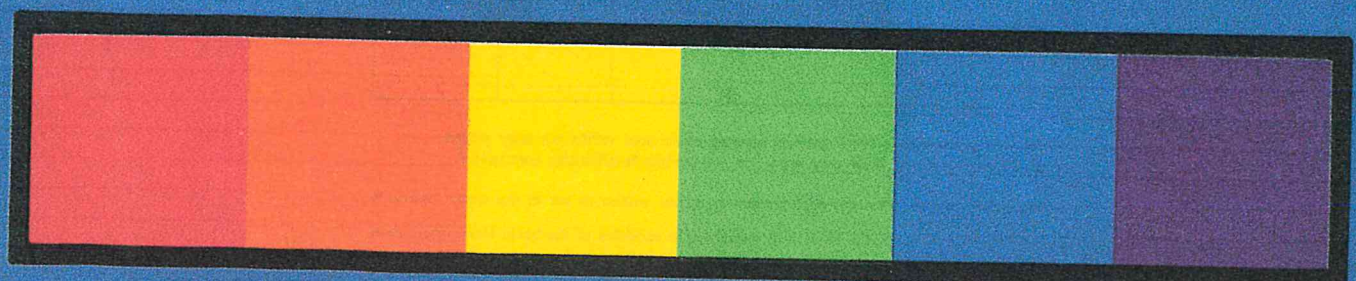
SPECTRUM MATHEMATICS SERIES

Blue Book



NAME: _____

SPECTRUM MATHEMATICS — Blue Book

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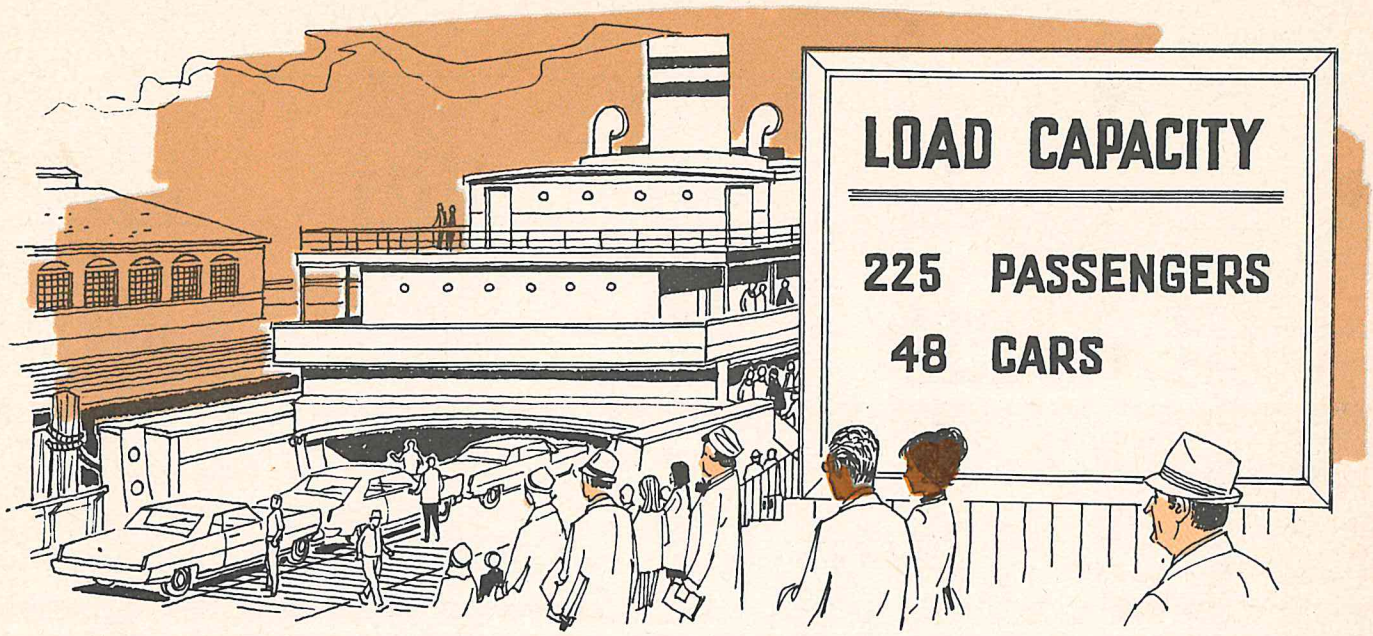
NAME _____

Problems



Solve each problem.

1. What is the maximum number of cars the ferry can transport on 16 one-way trips?

_____ cars can be transported.

1.

2. What is the maximum number of passengers that can be transported on 16 one-way trips?

_____ passengers can be transported.

2.

3. There were 196 passengers on one of the trips. How many more passengers could have been transported on that trip?

_____ more passengers could have been transported.

3.

4. The weight of 32 cars transported on one of the trips was 99,200 pounds. Suppose that each car weighed the same. What was the weight of each car?

The weight of each car was _____ pounds.

4.

5. During 4 of the trips, the following numbers of passengers were transported: 196; 216; 224; and 209. How many passengers were transported on these trips?

_____ passengers were transported.

5.

Check your answers. Record your score. Perfect score: 5 My score: _____

PRE-TEST—Addition, Subtraction, Multiplication, and Division

Add or subtract.

	a	*b*	*c*	*d*	*e*
1.	63 +21	487 +305	1452 +576	9752 8578 +2176	67584 12567 +12456
2.	97 −63	825 −354	603 −157	7459 −3126	57642 −21517

Multiply or divide.

	a	*b*	*c*	*d*
3.	67 ×2	314 ×5	712 ×7	1475 ×8
4.	571 ×32	6741 ×42	318 ×158	1045 ×314

5. $4\overline{)97}$ $8\overline{)785}$ $32\overline{)285}$ $42\overline{)675}$

6. $3\overline{)1574}$ $9\overline{)72459}$ $67\overline{)8574}$ $53\overline{)12532}$

Check your answers. Record your score. Perfect score: 26 My score: _____

NAME _____

Addition

Add ones.

TTh	Th	H	T	
			1	
3	3	2	3	4
6	0	1	2	5
+4	3	1	1	4
				3

Add tens.

TTh	Th	H	T	
			1	
3	3	2	3	4
6	0	1	2	5
+4	3	1	1	4
			7	3

Add hundreds.

TTh	Th	H	T	
			1	
3	3	2	3	4
6	0	1	2	5
+4	3	1	1	4
		6	7	3

Add thousands.

TTh	Th	H	T	
			1	
3	3	2	3	4
6	0	1	2	5
+4	3	1	1	4
7	6	7	3	

Add ten thousands.

TTh	Th	H	T	
			1	
3	3	2	3	4
6	0	1	2	5
+4	3	1	1	4
9	7	6	7	3

4 + 5 + 4 = 13 = 1T + 3

1T + 3T + 2T + 1T = ____T

2H + 1H + 3H = ____H

3Th + 0Th + 4Th = ____Th

3TTh + 6TTh = ____TTh

Add.

	a	*b*	*c*	*d*	*e*
1.	34 +5	57 +412	317 +5142	1241 +17132	15434 +27112
2.	43 12 +14	516 127 +242	1618 2206 +154	30121 12314 +2121	61013 72342 +53624
3.	25 34 +13	162 270 +484	4180 1264 +3341	13136 21017 +32441	31453 10262 +14578
4.	72 33 51 +62	312 601 741 +113	1453 1622 2711 +3501	13164 21073 12241 +31120	13016 13147 24434 +36213
5.	48 25 34 56 +63	223 446 565 674 +193	6785 4215 6141 2573 +4122	30633 11710 20822 11201 +12411	29306 15447 44558 73775 +82862

Check your answers. Record your score. Perfect score: 25 My score: _____

Problems

Solve each problem.

1. There are 217 boys and 232 girls at Woodson School. How many students are at Woodson School? 1.

There are _____ students at Woodson School.

2. Lauren read 3 library books. One contained 148 pages, another 132 pages, and the other 216 pages. How many pages did she read? 2.

She read _____ pages.

3. Yesterday a warehouse received three shipments of merchandise. The weights of the shipments were 4,125 pounds, 912 pounds, and 2,436 pounds. What was the total weight of the shipments? 3.

The total weight was _____ pounds.

4. During a 3-year period Mr. Sims drove his car the following distances: 9,546 miles, 8,742 miles, and 9,652 miles. How many miles did he drive his car during the 3 years? 4.

He drove _____ miles.

5. Last week a new car salesman sold 4 cars. The selling prices were $3,211; $2,885; $3,641; and $4,264. What were his total sales for the week? 5.

His total sales were $_____.

6. The population of Elmhurst is 43,526 and the population of Villa Park is 28,238. What is the combined population of the two towns? 6.

The combined population is _____.

7. A creamery processed 89,421 pounds of milk Monday, 76,125 pounds Tuesday, 48,129 pounds Wednesday, 69,473 pounds Thursday, and 98,584 pounds Friday. How much milk was processed during this period? 7.

_____ pounds of milk were processed.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Subtraction

Subtract ones.	*Subtract tens.*	*Subtract hundreds.*	*Subtract thousands.*	*Subtract ten thousands.*
TTh Th H T 8 14 9 8 6 9 ~~4~~ −5 6 7 1 6 8	TTh Th H T 8 14 9 8 6 ~~9~~ ~~4~~ −5 6 7 1 6 7 8	TTh Th 7 H 16 T 8 14 9 ~~8~~ ~~6~~ ~~9~~ ~~4~~ −5 6 7 1 6 9 7 8	TTh Th 7 H 16 T 8 14 9 ~~8~~ ~~6~~ ~~9~~ ~~4~~ −5 6 7 1 6 1 9 7 8	TTh Th 7 H 16 T 8 14 9 ~~8~~ ~~6~~ ~~9~~ ~~4~~ −5 6 7 1 6 4 1 9 7 8
Rename 9T + 4. 14 −6 8	 8T −1T ___T	Rename 8Th + 6H. 16H −7H ___H	 7Th −6Th ___Th	 9TTh −5TTh ___TTh

Subtract.

	a	*b*	*c*	*d*	*e*
1.	57 −4	447 −14	789 −191	5434 −675	57684 −4213
2.	68 −9	567 −19	847 −259	5678 −4132	78567 −40529
3.	23 −11	345 −94	804 −295	4567 −1418	51678 −10297
4.	76 −19	678 −89	4215 −104	4713 −2192	75159 −21642
5.	439 −7	804 −76	6758 −219	6507 −1706	75476 −19214
6.	675 −8	367 −151	4942 −261	7314 −2176	72143 −21674

Check your answers. Record your score. Perfect score: 30 My score: _____

Problems

Solve each problem.

1. Last Saturday the football team gained 87 yards rushing and 213 yards passing. How many more yards were gained passing than rushing?

_____ more yards were gained passing.

1.

2. Gladys' girl scout troop sold 475 boxes of cookies. Nancy's troop sold 289 boxes. How many more boxes did Gladys' troop sell than Nancy's troop?

Gladys' troop sold _____ more boxes.

2.

3. Mr. Harris drove 912 miles in May and 1,209 miles in June. How many more miles did he drive in June than in May?

He drove _____ more miles in June.

3.

4. In Hillside 1,693 families take the evening paper and 1,275 take the morning paper. How many more families take the evening paper?

_____ more families take the evening paper.

4.

5. In a contest 10,000 points are needed in order to win the grand prize. Milton has earned 7,975 points so far. How many more points does he need in order to win the grand prize?

He needs _____ more points.

5.

6. Ten years ago the population of Rosedale was 9,675. Today the population is 12,245. How much has the population increased during the 10-year period?

The population has increased _____.

6.

7. A truck and its cargo weigh 24,525 pounds. The truck weighs 12,750 pounds when empty. What is the weight of the cargo?

The cargo weighs _____ pounds.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Addition and Subtraction

	Check
91345	96018
+4673	−4673
96018	91345

If 91345 + 4673 = 96018,

then 96018 − 4673 = _____.

	Check
51015	38472
−12543	+12543
38472	51015

If 51015 − 12543 = 38472,

then 38472 + 12543 = _____.

Add or subtract. Check each answer.

	a	*b*	*c*
1.	157 −36	2415 +332	63755 −1214
2.	125 +523	4769 −1251	75325 +11321
3.	679 −425	6958 +1035	84321 −29112
4.	785 +125	6007 −1539	37652 +92584
5.	708 −529	7395 +3764	30067 −14269

Check your answers. Record your score. Perfect score: 15 My score: _____

Problems

Solve each problem. Check each answer.

1. There were 345 people at the school play Friday and 525 Saturday. How many people attended the play on those two days?

_____ people attended.

1.

2. Henry threw a softball 132 feet and Walter threw it 119 feet. How much farther did Henry throw the softball than Walter?

Henry threw the softball _____ feet farther.

2.

3. Jake delivered 1,225 circulars and Luke delivered 948. How many circulars did the two boys deliver?

The boys delivered _____ circulars.

3.

4. The longest span of the Golden Gate Bridge is 4,200 feet. The longest span of the Brooklyn Bridge is 1,595 feet. What is the difference between these two distances?

The difference is _____ feet.

4.

5. There are 3,529 books in the school library and 18,748 books in the city library. How many books are there in the two libraries?

There are _____ books in the two libraries.

5.

6. Mt. McKinley is 20,320 feet high. Mt. Kennedy is 16,286 feet high. How much higher is Mt. McKinley than Mt. Kennedy?

Mt. McKinley is _____ feet higher.

6.

7. The state of Illinois has an area of 56,400 square miles. The state of Wisconsin has an area of 56,154 square miles. What is the combined area of these two states?

The combined area is _____ square miles.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Addition and Subtraction

Add or subtract.

	a	*b*	*c*	*d*	*e*
1.	6 +43	67 +532	412 +5341	4725 +21063	56754 +43221
2.	59 −7	674 −52	8695 −364	67621 −5210	69548 −25037
3.	57 23 +11	634 26 +107	4125 516 +3243	51232 2426 +35319	12304 12130 +23149
4.	63 −17	876 −129	7654 −4126	54983 −1276	67894 −41327
5.	20 67 51 +21	120 63 281 +454	224 4052 3374 +126	2113 63012 11475 +2381	10168 54321 23146 +11287
6.	87 −49	507 −169	3769 −1595	63758 −1297	67885 −24389
7.	68 54 35 76 +46	724 156 345 654 +107	4124 124 5674 1176 +6782	3124 14765 23415 36767 +7412	54321 15247 61232 41234 +31259
8.	90 −47	700 −483	3007 −1249	50075 −1346	76548 −27879

Check your answers. Record your score. Perfect score: 40 My score: _____

Problems

Solve each problem.

1. In the city the highest summer temperature was 107 degrees. The lowest was 49 degrees. What is the difference between these temperatures?

1.

The difference is _____ degrees.

2. Jeff has 38 baseball cards, Steve has 47, and Odell has 63. How many baseball cards do the three boys have?

2.

The boys have _____ baseball cards.

3. The Stoeckigs are planning a 1,267-mile trip. They plan to travel 350 miles the first day. How much farther will they have to travel to complete the trip?

3.

They will need to travel _____ more miles.

4. Mary and Martha collect stamps. Mary has 1,237 stamps and Martha has 974 stamps. How many stamps do the two girls have?

4.

The girls have _____ stamps.

5. In problem 4, how many more stamps does Mary have than Martha?

5.

Mary has _____ more stamps.

6. Last week the following number of cases of candy were produced: gum drops 1,250; lemon sticks 647; peppermints 1,675; and fruit drops 939. How many cases of candy were produced?

6.

_____ cases of candy were produced.

7. Of the 87,725 residents of Page County, 37,968 are registered voters. How many of the residents are not registered voters?

7.

_____ are not registered voters.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Multiplication

$6 \times 3457 =$ _____

$80 \times 3457 =$ _____

$200 \times 3457 =$ _____

$20742 + 276560 + 691400 =$ _____

Multiply.

	a	*b*	*c*	*d*
1.	51 ×6	342 ×2	489 ×5	3121 ×3
2.	57 ×25	312 ×23	678 ×56	4213 ×12
3.	32 ×213	214 ×212	700 ×425	3123 ×213
4.	402 ×435	675 ×406	678 ×525	6795 ×427

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Solve each problem.

1. Mr. Clay drives 65 miles each day. How many miles will he drive in 5 days? 1.

He will drive _____ miles.

2. The new skyscraper is 63 stories tall. There are 13 feet for each story. What is the height of the building in feet? 2.

The height of the building is _____ feet.

3. Each case of machine parts weighs 128 pounds. What would be the total weight of 8 such cases? 3.

The total weight would be _____ pounds.

4. Mrs. Mays needs 6 books of trading stamps. It takes 1,200 stamps to fill a book. How many stamps does she need? 4.

She needs _____ stamps.

5. Each machine can produce 125 items a minute. There are 32 machines in all. How many items can be produced each minute by using all the machines? 5.

_____ items can be produced each minute.

6. Each machine in problem 5 weighs 1,650 pounds. What is the total weight of these machines? 6.

The total weight is _____ pounds.

7. The average weight of the 125 passengers on an airliner is 135 pounds. What is the total weight of the passengers? 7.

The total weight is _____ pounds.

8. A shipment consists of 1,560 cases. There are 144 items in each case. How many items are there in the shipment? 8.

There are _____ items in the shipment.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Rounding Numbers

Round 43 to the nearest ten.
43 is nearer 40 than 50.
43 is rounded to the nearest

ten as 40.

Round 25 to the nearest ten.
25 is as near 20 as 30.
In such cases we choose the even multiple of ten.
25 is rounded to the nearest

ten as 20.

Round 5969 to the nearest hundred.
5969 is nearer 6000 than 5900.
5969 is rounded to the nearest

hundred as _____.

Round 3500 to the nearest thousand.
3500 is as near 3000 as 4000.
In such cases we choose the even multiple of one thousand.
3500 is rounded to the nearest

thousand as _____.

Round to the nearest ten.

	a		*b*		*c*	
1.	48	_____	62	_____	51	_____
2.	73	_____	45	_____	75	_____
3.	376	_____	429	_____	685	_____

Round to the nearest hundred.

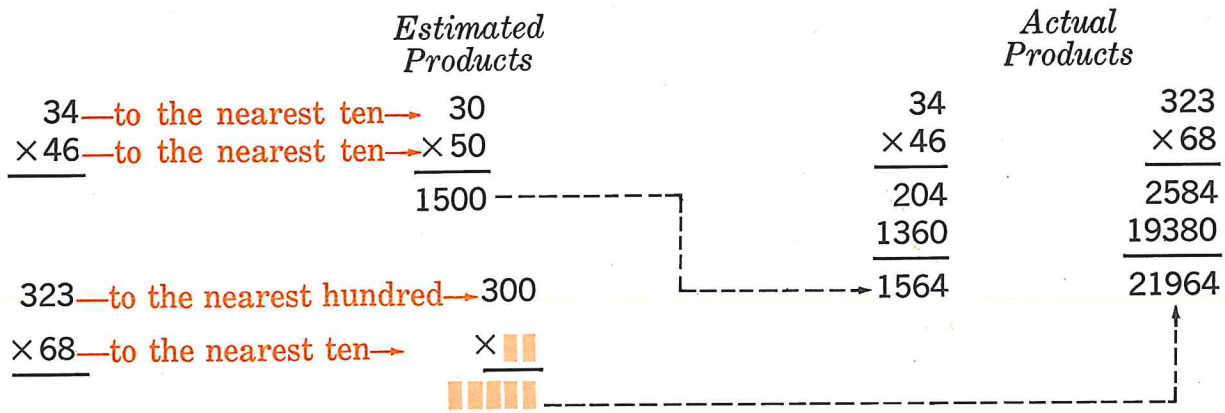
4.	435	_____	681	_____	527	_____
5.	694	_____	950	_____	750	_____
6.	4752	_____	7550	_____	8349	_____

Round to the nearest thousand.

7.	4643	_____	8354	_____	9852	_____
8.	5500	_____	6500	_____	7500	_____
9.	4251	_____	4500	_____	6750	_____

Check your answers. Record your score. Perfect score: 27 My score: _____

Estimating Products



Write the estimated product on each blank. Then find each product.

	a	*b*	*c*
1.	96 ×62 _____	63 ×88 _____	91 ×81 _____
2.	52 ×35 _____	65 ×37 _____	75 ×45 _____
3.	498 ×98 _____	801 ×82 _____	502 ×52 _____
4.	597 ×204 _____	403 ×496 _____	605 ×305 _____

Check your answers. Record your score. Perfect score: 24 My score: _____

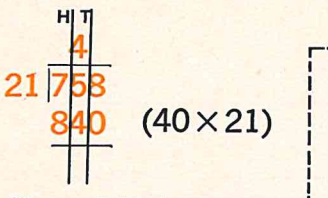
NAME _____

Division

Study how to divide 758 by 21.

Round 758 to the nearest hundred.
Round 21 to the nearest ten.
Since 8H ÷ 2T = 4T,

try 4 as the tens digit.



(40 × 21)

Since 840 is greater than 758, try 3 as the tens digit.

(30 × 21)

128 (758 − 630)

Round 128 to the nearest ten.
Round 21 to the nearest ten.
Since 13T ÷ 2T is about 6,

try ____ as the ones digit.

(6 × 21)

remainder → (128 − 126)

Divide.

	a	*b*	*c*	*d*	*e*
1.	8) 78	6) 96	9) 243	5) 784	7) 945
2.	36) 216	24) 197	42) 576	67) 837	47) 967
3.	87) 678	59) 895	73) 939	96) 478	89) 999

Check your answers. Record your score. Perfect score: 15 My score: _____

Problems

Solve each problem.

1. There are 92 folding chairs in all. How many rows of 8 chairs each can be formed? How many chairs will be left over?

_____ rows can be formed.

_____ chairs will be left over.

1.

2. Eighty-four books are to be put into 3 stacks with the same number in each stack. How many books will be in each stack?

_____ books will be in each stack.

2.

3. A football team gained 192 yards on 8 completed passes. Suppose the same number of yards was gained on each pass. How many yards were gained on each pass?

_____ yards were gained on each pass.

3.

4. There are 764 items to be packed. Eight items can be packed in each case. How many cases will be filled? How many items will be in the partially filled case?

_____ cases will be filled.

_____ items will be in the partially filled case.

4.

5. Suppose the items in problem 4 are to be packed in larger cases that hold 24 items each. How many cases will be filled? How many items will be in the partially filled case?

_____ cases will be filled.

_____ items will be in the partially filled case.

5.

6. There were 288 customers at the laundromat during a 12-hour period. Suppose there was the same number of customers each hour. How many customers were there each hour?

There were _____ customers each hour.

6.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Division

Study how to divide 5313 by 17.

Round 5313 to 5Th.
Round 17 to 2T.
Since 5Th ÷ 2T is about 2H,

try 2 as the hundreds digit.

Since 1913 is greater than 100 × 17, try 3 as the hundreds digit.

Round 213 to 2H.
Round 17 to 2T.
Since 2H ÷ 2T = 1T,

try ____ as the tens digit.

Round 43 to 4T.
Round 17 to 2T.
Since 4T ÷ 2T = 2,

try ____ as the ones digit.

Divide.

	a	*b*	*c*	*d*
1.	9⟌1457	6⟌2472	32⟌1257	68⟌4896
2.	4⟌5748	7⟌7487	53⟌5984	46⟌9247
3.	3⟌17241	8⟌96574	89⟌25748	27⟌54810

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Solve each problem.

1. A barge made a 2,148-mile trip down the Mississippi River in 2 weeks. Suppose the same distance was traveled each week. How many miles were traveled each week?

_____ miles were traveled each week.

1.

2. There were 12,438 spark plugs produced yesterday. They were packed into boxes of 6 spark plugs each. How many boxes were filled?

_____ boxes were filled.

2.

3. Suppose that the spark plugs in problem 2 were packed into boxes of 8 spark plugs each. How many boxes would be filled? How many spark plugs would be left over?

_____ boxes would be filled.

_____ spark plugs would be left over.

3.

4. Mr. Lucks worked a total of 2,156 hours during a 49-week period. He worked the same number of hours each week. How many hours did he work each week?

He worked _____ hours each week.

4.

5. There are 1,737 oranges to be put into bags. How many bags of one dozen each can be filled? How many oranges will be left over?

_____ bags will be filled.

_____ oranges will be left over.

5.

6. A 12,600-pound shipment consists of cases weighing 56 pounds each. How many cases are in the shipment?

There are _____ cases in the shipment.

6.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Division

```
   1314 r29
64|84125
  64000
  -----
  20125
  19200
  -----
    925
    640
    ---
    285
    256
    ---
     29
```

Check

1314
× 64

5256
78840

84096
+ 29

84125

To check 84125 ÷ 64 = 1314 r29,

multiply _____ by 64.

Then add _____ to this product. This sum should be the same number as the dividend.

Divide. Check each answer.

	a	*b*	*c*
1.	$6\overline{)386}$	$54\overline{)425}$	$12\overline{)672}$
2.	$7\overline{)1874}$	$39\overline{)2654}$	$27\overline{)8376}$
3.	$8\overline{)54921}$	$42\overline{)39564}$	$76\overline{)97524}$

Check your answers. Record your score. Perfect score: 9 My score: _____

Problems

Solve each problem. Check each answer.

1. The 960 auditorium seats are separated into 3 sections. Each section has the same number of seats. How many seats are in each section?

There are _____ seats in each section.

1.

2. In a raffle Mr. Johnson won 250 gallons of gasoline. He uses 16 gallons each week. How many weeks will this gasoline last? How many gallons would be left over?

The gasoline will last _____ weeks.

_____ gallons would be left over.

2.

3. The Andersons plan to visit some relatives who live 1,232 miles away. They plan to drive the same distance each day and make the trip in 4 days. How many miles will they need to drive each day?

They will need to drive _____ miles each day.

3.

4. The total driving time for the trip in problem 3 is estimated to be 22 hours. Suppose the same number of miles are driven each hour. How many miles will the Andersons need to drive each hour?

They will need to drive _____ miles each hour.

4.

5. Yesterday 12,075 bottles of root beer were produced. The bottles are to be put into 6-bottle cartons. How many cartons would be filled? How many bottles would be left over?

_____ cartons would be filled.

_____ bottles would be left over.

5.

6. Suppose the bottles of root beer in problem 5 are put into 24-bottle cases. How many cases would be filled? How many bottles would be left over?

_____ cases would be filled.

_____ bottles would be left over.

6.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Multiplication and Division

Multiply or divide.

	a	*b*	*c*	*d*
1.	64 ×9	475 ×8	674 ×5	4875 ×6
2.	57 ×63	487 ×46	875 ×57	9147 ×48
3.	417 ×305	527 ×129	1752 ×942	6057 ×128
4.	32)258	76)984	25)1425	43)3452
5.	73)9946	14)12574	83)76542	37)68754

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem.

1. A racing car has a top speed of 146 miles per hour. Suppose it maintains that speed for 3 hours. How many miles would it travel during that period?

It would travel _____ miles.

1.

2. In 1 hour, 780 items can be produced. Suppose the same number of items are produced each minute. How many items can be produced in 1 minute?

_____ items can be produced in one minute.

2.

3. An average of 5,928 people attended each of the Hawks' home basketball games last year. There were 36 home games. How many people attended the Hawks' home games last year?

_____ people attended.

3.

4. The DoNut Hut sold 1,764 doughnuts yesterday. How many dozen doughnuts were sold yesterday?

_____ dozen doughnuts were sold.

4.

5. There are 168 street lights along Main Street. Each light uses 225 watts of electrical power. How many watts are being used when all the lights are on?

_____ watts are being used.

5.

6. Yesterday 68,725 light bulbs were produced. They are to be packed 24 to a case. How many cases can be filled? How many light bulbs would be left over?

_____ cases can be filled.

_____ light bulbs would be left over.

6.

7. The state population is increasing at the rate of 1,253 people a day. At this rate, how much would the population increase in 365 days?

It would increase by _____ people.

7.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

TEST—Addition, Subtraction, Multiplication, and Division

Add or subtract.

	a	*b*	*c*	*d*	*e*
1.				1456	56752
			5347	2354	14314
	48	315	434	1257	25678
	+31	+782	+1234	+5678	+1245
2.	57	125	4572	56784	67525
	−32	−57	−2187	−2578	−12578

Multiply or divide.

3.	57	417	657	314	4123
	×6	×5	×32	×567	×578

4. $8\overline{)74}$ $9\overline{)1429}$ $57\overline{)1257}$ $75\overline{)67575}$ $45\overline{)96752}$

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Operations Involving Fractional Numbers

Express each of the following in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{2}{3}\times\frac{4}{5}$	$\frac{7}{8}\times\frac{4}{5}$	$\frac{9}{10}\times\frac{5}{6}$	$\frac{5}{6}\times\frac{8}{15}\times\frac{3}{4}$
2.	$9\times3\frac{1}{6}$	$2\frac{4}{5}\times1\frac{3}{7}$	$\frac{7}{8}\times6\frac{1}{3}$	$3\times1\frac{1}{3}\times2\frac{1}{10}$
3.	$\frac{2}{3}\div\frac{1}{2}$	$\frac{5}{8}\div\frac{5}{6}$	$6\div\frac{3}{4}$	$4\frac{3}{7}\div1\frac{1}{14}$
4.	$\begin{array}{r}\frac{3}{10}\\+\frac{4}{10}\\\hline\end{array}$	$\begin{array}{r}\frac{1}{2}\\+\frac{1}{4}\\\hline\end{array}$	$\begin{array}{r}2\frac{1}{2}\\3\frac{4}{5}\\+1\frac{2}{3}\\\hline\end{array}$	$\begin{array}{r}6\\\frac{7}{8}\\+4\frac{3}{10}\\\hline\end{array}$
5.	$\begin{array}{r}\frac{8}{9}\\-\frac{2}{3}\\\hline\end{array}$	$\begin{array}{r}\frac{4}{5}\\-\frac{2}{3}\\\hline\end{array}$	$\begin{array}{r}6\\-2\frac{1}{2}\\\hline\end{array}$	$\begin{array}{r}5\frac{2}{3}\\-2\frac{9}{10}\\\hline\end{array}$

Check your answers. Record your score. Perfect score: 20 My score: _____

NAME _____

Multiplication

$$\frac{1}{2}\times\frac{3}{5}\times\frac{3}{4}=\frac{1\times3\times3}{2\times5\times4}$$ ← multiply numerators; ← multiply denominators

$$=\frac{9}{40}$$

$\frac{1}{2}\times\frac{3}{4}=\frac{1\times3}{2\times4}$

$=$ _____

$\frac{4}{5}\times\frac{2}{3}\times\frac{1}{3}=\frac{\times\quad\times}{\times\quad\times}$

$=$ _____

Multiply.

	a	*b*	*c*	*d*
1.	$\frac{3}{4}\times\frac{1}{5}$	$\frac{2}{3}\times\frac{4}{5}$	$\frac{7}{8}\times\frac{5}{6}\times\frac{1}{2}$	$\frac{3}{5}\times\frac{2}{7}\times\frac{1}{5}$
2.	$\frac{1}{2}\times\frac{1}{3}$	$\frac{4}{5}\times\frac{2}{7}$	$\frac{3}{8}\times\frac{3}{5}\times\frac{3}{4}$	$\frac{1}{2}\times\frac{1}{4}\times\frac{1}{3}$
3.	$\frac{5}{8}\times\frac{5}{8}$	$\frac{6}{7}\times\frac{3}{5}$	$\frac{2}{3}\times\frac{1}{5}\times\frac{1}{7}$	$\frac{3}{7}\times\frac{1}{5}\times\frac{3}{4}$
4.	$\frac{3}{8}\times\frac{5}{7}$	$\frac{5}{7}\times\frac{3}{8}$	$\frac{4}{5}\times\frac{4}{5}\times\frac{4}{5}$	$\frac{2}{3}\times\frac{2}{3}\times\frac{2}{3}$
5.	$\frac{3}{5}\times\frac{2}{5}$	$\frac{7}{8}\times\frac{3}{10}$	$\frac{5}{6}\times\frac{5}{9}\times\frac{1}{2}$	$\frac{3}{5}\times\frac{2}{5}\times\frac{4}{5}$
6.	$\frac{3}{5}\times\frac{1}{2}$	$\frac{5}{8}\times\frac{7}{9}$	$\frac{3}{8}\times\frac{5}{7}\times\frac{3}{4}$	$\frac{2}{3}\times\frac{4}{5}\times\frac{1}{7}$

Check your answers. Record your score. Perfect score: 24 My score: _____

Greatest Common Factor

factors of 8 < 1×8, 2×4 > 1,2,4,8

factors of 12 < 1×12, 2×6, 3×4 > 1,2,3,4,6,12

common factors of 8 and 12: 1,2,4

greatest common factor of 8 and 12: 4

factors of 9 < 1×9, 3×3 > 1,3,9

factors of 15 < 1×15, 3×5 > 1,3,5,15

common factors of 9 and 15: _____

greatest common factor of 9 and 15: _____

List the factors of each number named below. Then list the common factors and the greatest common factor of each pair of numbers.

		factors	*common factor(s)*	*greatest common factor*
1.	4	_____	_____	_____
	6	_____		
2.	10	_____	_____	_____
	12	_____		
3.	16	_____	_____	_____
	24	_____		
4.	9	_____	_____	_____
	16	_____		
5.	18	_____	_____	_____
	20	_____		
6.	25	_____	_____	_____
	24	_____		
7.	48	_____	_____	_____
	36	_____		

Check your answers. Record your score. Perfect score: 28 My score: _____

NAME _____

Renaming Fractions and Mixed Numerals in Simplest Form

A fraction is in simplest form when the greatest common factor of the numerator and denominator is 1.

Divide 8 and 12 by their greatest common factor.

$\frac{8}{12}=\frac{8\div4}{12\div4}=\frac{2}{3}$

The simplest form for $\frac{8}{12}$ is _____.

A mixed numeral is in simplest form when its fraction is in simplest form and names a number between 0 and 1.

Divide 10 and 15 by their greatest common factor.

$8\frac{10}{15}=8+\frac{10}{15}$ $\quad\frac{10}{15}=\frac{10\div5}{15\div5}=\frac{2}{3}$

$=8+\frac{2}{3}$

$=8\frac{2}{3}$

The simplest form for $8\frac{10}{15}$ is _____.

Express each of the following in simplest form.

	a	*b*	*c*
1.	$\frac{6}{15}$	$\frac{12}{20}$	$\frac{21}{30}$
2.	$\frac{16}{36}$	$\frac{40}{42}$	$\frac{18}{36}$
3.	$2\frac{9}{15}$	$6\frac{18}{30}$	$8\frac{36}{54}$
4.	$\frac{10}{35}$	$3\frac{4}{18}$	$7\frac{18}{24}$
5.	$5\frac{18}{45}$	$\frac{30}{105}$	$\frac{36}{60}$

Check your answers. Record your score. Perfect score: 15 My score:_____

Expressing Products in Simplest Form

Study the two ways $\frac{6}{7}\times\frac{3}{4}$ is expressed in simplest form.

$$\frac{6}{7}\times\frac{3}{4}=\frac{6\times3}{7\times4}$$
$$=\frac{18}{28}$$
$$=\frac{18\div2}{28\div2}$$
$$=\underline{\quad\quad}$$

$$\frac{6}{7}\times\frac{3}{4}=\frac{\overset{3}{\cancel{6}}\times3}{7\times\underset{2}{\cancel{4}}}$$
$$=\frac{3\times3}{7\times2}$$
$$=\underline{\quad\quad}$$

Divide 6 (in the numerator) and 4 (in the denominator) by their greatest common factor, 2.

Express each product in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{4}{5}\times\frac{1}{2}$	$\frac{3}{8}\times\frac{2}{3}$	$\frac{3}{5}\times\frac{4}{9}$	$\frac{8}{9}\times\frac{7}{10}$
2.	$\frac{2}{3}\times\frac{5}{6}$	$\frac{7}{10}\times\frac{8}{9}$	$\frac{10}{11}\times\frac{7}{12}$	$\frac{5}{7}\times\frac{3}{10}$
3.	$\frac{7}{9}\times\frac{6}{11}$	$\frac{12}{13}\times\frac{3}{4}$	$\frac{10}{11}\times\frac{7}{15}$	$\frac{8}{9}\times\frac{5}{12}$
4.	$\frac{5}{8}\times\frac{2}{5}$	$\frac{9}{16}\times\frac{1}{6}$	$\frac{1}{2}\times\frac{8}{9}$	$\frac{4}{7}\times\frac{14}{15}$
5.	$\frac{3}{8}\times\frac{4}{5}$	$\frac{8}{9}\times\frac{6}{7}$	$\frac{4}{7}\times\frac{5}{6}$	$\frac{4}{15}\times\frac{12}{13}$

Check your answers. Record your score. Perfect score: 20 My score: _____

NAME _____

Expressing Products in Simplest Form

Study how $\frac{5}{6}\times\frac{9}{10}\times\frac{1}{7}$ is expressed in simplest form.

$$\frac{\overset{1}{\cancel{5}}\times 9\times 1}{6\times\underset{2}{\cancel{10}}\times 7}$$

Both numerator and denominator have been divided by _____.

$$\frac{\overset{1}{\cancel{5}}\times\overset{3}{\cancel{9}}\times 1}{\underset{2}{\cancel{6}}\times\underset{2}{\cancel{10}}\times 7}$$

Both numerator and denominator have been divided by _____.

$$\frac{\overset{1}{\cancel{5}}\times\overset{3}{\cancel{9}}\times 1}{\underset{2}{\cancel{6}}\times\underset{2}{\cancel{10}}\times 7}=\frac{1\times 3\times 1}{2\times 2\times 7}=\frac{3}{28}$$

$\frac{5}{6}\times\frac{9}{10}\times\frac{1}{7}=$ _____

Express each product in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{3}{5}\times\frac{5}{6}$	$\frac{4}{9}\times\frac{3}{8}$	$\frac{7}{8}\times\frac{6}{7}$	$\frac{2}{3}\times\frac{3}{4}\times\frac{1}{5}$
2.	$\frac{9}{10}\times\frac{5}{6}$	$\frac{5}{8}\times\frac{4}{15}$	$\frac{10}{11}\times\frac{11}{12}$	$\frac{4}{5}\times\frac{3}{4}\times\frac{5}{6}$
3.	$\frac{7}{9}\times\frac{9}{14}$	$\frac{4}{5}\times\frac{5}{12}$	$\frac{3}{4}\times\frac{8}{9}$	$\frac{4}{7}\times\frac{2}{3}\times\frac{7}{8}$
4.	$\frac{4}{9}\times\frac{9}{10}$	$\frac{2}{3}\times\frac{9}{10}$	$\frac{3}{10}\times\frac{5}{6}$	$\frac{2}{5}\times\frac{3}{4}\times\frac{5}{6}$
5.	$\frac{5}{9}\times\frac{9}{10}$	$\frac{7}{8}\times\frac{2}{7}$	$\frac{3}{10}\times\frac{5}{9}$	$\frac{4}{7}\times\frac{7}{8}\times\frac{2}{3}$

Check your answers. Record your score. Perfect score: 20 My score: _____

Renaming Numbers

Rename $\frac{1}{3}$ as sixths.

$\frac{1}{3} = \frac{1}{3} \times 1$

$= \frac{1}{3} \times \frac{2}{2}$ ← Choose $\frac{2}{2}$ for 1 so the denominator will be 6.

$= \frac{1 \times 2}{3 \times 2}$

$= \frac{2}{6}$

Rename $3\frac{2}{5}$ as fifths.

$3\frac{2}{5} = 3\frac{2}{5}$ → $\frac{(\times) + }{5}$

$= 3\frac{2}{5}$ → $\frac{(5 \times 3) + }{5}$

$= 3\frac{2}{5}$ → $\frac{(5 \times 3) + 2}{5}$

$= \frac{17}{5}$ ← $\frac{15 + 2}{5}$

To rename $4\frac{2}{3}$ as thirds, $4\frac{2}{3} = \frac{(\quad \times \quad) + }{3} = \frac{\quad + }{3} = \frac{\quad}{3}$.

To rename 6 as fourths, $6 = \frac{6}{1} = \frac{6}{1} \times \frac{4}{4} = \frac{\quad \times \quad}{\quad \times \quad} = ____$.

Rename as directed.

	a	*b*	*c*	*d*
1.	Rename 5 as tenths.	Rename 4 as twelfths.	Rename 2 as eighths.	Rename $2\frac{1}{3}$ as thirds.
2.	Rename $\frac{4}{5}$ as fifteenths.	Rename $\frac{3}{8}$ as sixteenths.	Rename $\frac{1}{2}$ as tenths.	Rename $3\frac{1}{2}$ as halves.
3.	Rename 3 as sevenths.	Rename $\frac{3}{4}$ as twentieths.	Rename 7 as fourteenths.	Rename $5\frac{3}{4}$ as fourths.

Check your answers. Record your score. Perfect score: 12 My score: _____

NAME _____

Multiplication

$$6 \times 5\frac{3}{4} = \frac{6}{1} \times \frac{23}{4}$$
$$= \frac{\cancel{6}^{3} \times 23}{1 \times \cancel{4}_{2}}$$
$$= \frac{69}{2}$$
$$= 34\frac{1}{2}$$

6 is renamed as _____.

$5\frac{3}{4}$ is renamed as _____.

$$2\frac{2}{3} \times 1\frac{1}{2} \times \frac{4}{5} = \frac{8}{3} \times \frac{3}{2} \times \frac{4}{5}$$
$$= \frac{\cancel{8}^{4} \times \cancel{3}^{1} \times 4}{\cancel{3}_{1} \times \cancel{2}_{1} \times 5}$$
$$= \frac{4 \times 1 \times 4}{1 \times 1 \times 5}$$
$$= \frac{16}{5} \text{ or } 3\frac{1}{5}$$

$2\frac{2}{3}$ is renamed as _____.

$1\frac{1}{2}$ is renamed as _____.

Express each product in simplest form.

	a	*b*	*c*
1.	$8 \times 2\frac{5}{6}$	$4\frac{2}{3} \times 9$	$3\frac{1}{6} \times 2 \times 9$
2.	$1\frac{2}{3} \times 1\frac{1}{5}$	$1\frac{2}{7} \times 2\frac{1}{3}$	$1\frac{1}{3} \times 1\frac{1}{8} \times 1\frac{2}{3}$
3.	$1\frac{1}{9} \times \frac{3}{8}$	$\frac{5}{6} \times 1\frac{1}{8}$	$\frac{4}{5} \times 3\frac{1}{2} \times 2\frac{1}{2}$
4.	$3\frac{1}{3} \times 1\frac{1}{5}$	$2\frac{2}{5} \times \frac{5}{8}$	$2\frac{1}{3} \times \frac{3}{7} \times \frac{1}{2}$

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Solve. Express each answer in simplest form.

1. Ava has $1\frac{1}{2}$ sacks of flour. Each sack weighs 5 pounds. How many pounds of flour does Ava have?

Ava has _____ pounds of flour.

1.

2. Carla bought $\frac{3}{4}$ pound of candy. Two thirds of this amount was eaten. How many pounds of candy were eaten?

_____ pound was eaten.

2.

3. An engine uses $2\frac{3}{4}$ gallons of fuel each hour. At that rate how many gallons of fuel would the engine use in $3\frac{2}{5}$ hours?

It would use _____ gallons.

3.

4. In problem 3, how many gallons of fuel would the engine use in 8 hours?

It would use _____ gallons.

4.

5. Ralph packs 9 three-fourth pound sacks of candy in each carton. How many pounds of candy would there be in $5\frac{2}{3}$ cartons?

There would be _____ pounds.

5.

6. A carpenter has 12 boards each $5\frac{5}{6}$ feet long. What is the combined length of all 12 boards?

The combined length is _____ feet.

6.

7. It takes 36 nails to weigh a pound. How many nails would it take to weigh $7\frac{2}{3}$ pounds?

There are _____ nails in $7\frac{2}{3}$ pounds.

7.

8. Mr. Wrobel wrote $3\frac{4}{5}$, $3\frac{2}{3}$, and $3\frac{5}{6}$ on the board. He told the pupils to find the product of the two least numbers named. What is the answer?

The answer is _____.

8.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Division

The product of a number and its **reciprocal** is 1.

reciprocals

$2 \times \frac{1}{2} = \frac{2}{2}$ or 1

reciprocals

$\frac{4}{5} \times \frac{5}{4} = \frac{20}{20}$ or 1

To divide 6 by 2, you could multiply 6 by the reciprocal of 2.

reciprocals

$6 \div 2 =$ _____ $6 \times \frac{1}{2} =$ _____

To divide any number by a fractional number, multiply that number by the reciprocal of the fractional number.

reciprocals

$$2\tfrac{1}{2} \div \tfrac{3}{4} = \tfrac{5}{2} \times \tfrac{4}{3}$$
$$= \frac{5 \times \cancel{4}^{2}}{\cancel{2}_{1} \times 3}$$
$$= \frac{5 \times 2}{1 \times 3}$$
$$= \frac{10}{3} \text{ or } 3\tfrac{1}{3}$$

To divide $2\frac{1}{2}$ by $\frac{3}{4}$,

multiply $2\frac{1}{2}$ or $\frac{5}{2}$ by _____.

Express each quotient in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{3}{4} \div \frac{1}{2}$	$\frac{1}{2} \div \frac{3}{4}$	$\frac{4}{5} \div \frac{8}{15}$	$\frac{7}{9} \div \frac{5}{12}$
2.	$14 \div \frac{7}{10}$	$6 \div \frac{8}{9}$	$24 \div \frac{10}{11}$	$32 \div \frac{4}{5}$
3.	$2\frac{1}{4} \div \frac{5}{8}$	$4\frac{2}{3} \div \frac{7}{9}$	$3\frac{1}{3} \div \frac{8}{9}$	$2\frac{2}{5} \div \frac{8}{15}$

Check your answers. Record your score. Perfect score: 12 My score: _____

Division

reciprocals

$$1\frac{3}{5} \div 6 = \frac{8}{5} \times \frac{1}{6}$$

$$= \frac{\overset{4}{\cancel{8}} \times 1}{5 \times \underset{3}{\cancel{6}}}$$

$$= \frac{4}{15}$$

To divide $1\frac{3}{5}$ by 6,

multiply $1\frac{3}{5}$ or $\frac{8}{5}$ by _____.

reciprocals

$$3\frac{3}{8} \div 1\frac{1}{2} = \frac{27}{8} \times \frac{2}{3}$$

$$= \frac{\overset{9}{27} \times \overset{1}{2}}{\underset{4}{8} \times \underset{1}{3}}$$

$$= \frac{9}{4} \text{ or } 2\frac{1}{4}$$

To divide $3\frac{3}{8}$ by $1\frac{1}{2}$,

multiply $3\frac{3}{8}$ or $\frac{27}{8}$ by _____.

Express each quotient in simplest form.

	a	*b*	*c*	*d*
1.	$2\frac{1}{3} \div 2$	$2\frac{2}{5} \div 8$	$8\frac{1}{3} \div 10$	$13\frac{1}{2} \div 3$
2.	$4\frac{1}{2} \div 1\frac{1}{3}$	$3\frac{1}{3} \div 1\frac{1}{5}$	$3\frac{1}{2} \div 4\frac{2}{3}$	$6\frac{2}{3} \div 1\frac{1}{9}$
3.	$5 \div 1\frac{1}{2}$	$10 \div 1\frac{2}{3}$	$\frac{7}{8} \div 1\frac{1}{6}$	$\frac{3}{10} \div 4\frac{1}{2}$
4.	$2\frac{1}{2} \div 5$	$5\frac{1}{2} \div 1\frac{1}{6}$	$8 \div 2\frac{2}{5}$	$\frac{4}{5} \div 1\frac{1}{5}$

Check your answers. Record your score. Perfect score: 16 My score: _____

NAME _____

Division

Express each quotient in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{7}{8} \div \frac{1}{2}$	$\frac{4}{7} \div \frac{6}{7}$	$\frac{7}{10} \div \frac{14}{15}$	$\frac{5}{9} \div \frac{5}{6}$
2.	$8 \div \frac{4}{5}$	$9 \div \frac{3}{4}$	$\frac{4}{5} \div 6$	$\frac{5}{9} \div 5$
3.	$2\frac{1}{3} \div 1\frac{2}{3}$	$2\frac{2}{3} \div 3\frac{1}{3}$	$1\frac{2}{5} \div 1\frac{2}{7}$	$2\frac{2}{5} \div 3\frac{1}{3}$
4.	$\frac{3}{5} \div 1\frac{2}{7}$	$1\frac{1}{8} \div \frac{5}{6}$	$1\frac{3}{7} \div \frac{5}{7}$	$\frac{1}{2} \div 1\frac{1}{4}$
5.	$3\frac{1}{3} \div 1\frac{1}{4}$	$1\frac{7}{8} \div 1\frac{1}{4}$	$1\frac{5}{12} \div 2\frac{2}{3}$	$5\frac{3}{5} \div 2\frac{1}{10}$

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve. Express each answer in simplest form.

1. If you divide $\frac{5}{6}$ by $\frac{3}{4}$, what is the answer? **1.**

The answer is _____.

2. If you divide $\frac{3}{4}$ by $\frac{5}{6}$, what is the answer? **2.**

The answer is _____.

3. Two-thirds pound of candy was given to 6 boys. Each boy received the same amount. How much of a pound of candy did each boy receive? **3.**

Each boy received _____ pound of candy.

4. Twenty pounds of sand are to be placed in containers. Each will hold $3\frac{3}{4}$ pounds of sand. How many full containers will there be? What part of the next container will be filled? **4.**

There will be _____ full containers.

_____ of the next container will be filled.

5. Consider $4\frac{4}{5}$ and $4\frac{3}{4}$. What is the answer if you divide the greater number by the lesser number? **5.**

The answer is _____.

6. Consider $3\frac{7}{8}$, $3\frac{6}{7}$, and $3\frac{5}{6}$. What is the answer if you divide the least number by the greatest number? **6.**

The answer is _____.

7. There are $5\frac{1}{4}$ quarts of water to be put into 3 cans. The same amount is to be put into each can. How many quarts of water will be in each can? **7.**

_____ quarts are put into each can.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Addition and Subtraction

Study how to add or subtract when **common** (the same) **denominators** are involved.

$$\begin{array}{r} \frac{2}{5} \\ \frac{3}{5} \\ +\frac{4}{5} \\ \hline \end{array}$$

$\frac{9}{5} = 1\frac{4}{5}$

$\frac{2}{5} + \frac{3}{5} + \frac{4}{5} = \frac{2+3+4}{5}$

$= \frac{9}{5}$

$= $ _____

$$\begin{array}{r} \frac{7}{9} \\ -\frac{2}{9} \\ \hline \end{array}$$

$\frac{5}{9}$

$\frac{7}{9} - \frac{2}{9} = \frac{\quad - \quad}{9}$

$= $ _____

Express each sum or difference in simplest form.

	a	*b*	*c*	*d*	*e*	*f*
1.	$\begin{array}{r} \frac{3}{5} \\ +\frac{1}{5} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{8} \\ +\frac{6}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{4} \\ +\frac{3}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ +\frac{4}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{6}{7} \\ +\frac{3}{7} \\ \hline \end{array}$	$\begin{array}{r} \frac{2}{4} \\ +\frac{3}{4} \\ \hline \end{array}$
2.	$\begin{array}{r} \frac{2}{8} \\ \frac{2}{8} \\ +\frac{1}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{4}{6} \\ \frac{5}{6} \\ +\frac{2}{6} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{9} \\ \frac{4}{9} \\ +\frac{5}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{10} \\ \frac{2}{10} \\ +\frac{9}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{5} \\ \frac{4}{5} \\ +\frac{2}{5} \\ \hline \end{array}$	$\begin{array}{r} \frac{1}{8} \\ \frac{3}{8} \\ +\frac{6}{8} \\ \hline \end{array}$
3.	$\begin{array}{r} \frac{5}{7} \\ -\frac{4}{7} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{8} \\ -\frac{1}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ -\frac{4}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{7}{9} \\ -\frac{1}{9} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{8} \\ -\frac{2}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{4}{6} \\ -\frac{3}{6} \\ \hline \end{array}$
4.	$\begin{array}{r} \frac{7}{12} \\ -\frac{2}{12} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ -\frac{1}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{10}{14} \\ -\frac{3}{14} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{15} \\ -\frac{2}{15} \\ \hline \end{array}$	$\begin{array}{r} \frac{6}{10} \\ -\frac{2}{10} \\ \hline \end{array}$	$\begin{array}{r} \frac{3}{4} \\ -\frac{1}{4} \\ \hline \end{array}$

Check your answers. Record your score. Perfect score: 24 My score: _____

Problems

Solve. Express each answer in simplest form.

1. Mary Ann has a rock that weighs $\frac{3}{10}$ pound and Trudy has a rock that weighs $\frac{9}{10}$ pound. What is the combined weight of both rocks? **1.**

The combined weight is _____ pounds.

2. In problem 1, how much more does the heavier rock weigh? **2.**

The heavier rock weighs _____ pound more.

3. Book A is $\frac{1}{8}$ inch thick, book B is $\frac{3}{8}$ inch thick, and book C is $\frac{5}{8}$ inch thick. What is the total thickness of all three books? **3.**

The total thickness is _____ inches.

4. In problem 3, what is the difference in thickness between books A and C? **4.**

The difference is _____ inch.

5. In problem 3, what is the difference in thickness between books B and C? **5.**

The difference is _____ inch.

6. Dwayne spent $\frac{3}{12}$ hour eating, $\frac{11}{12}$ hour watching TV, and $\frac{5}{12}$ hour reading. How much longer did Dwayne spend reading than eating? **6.**

He spent _____ hour more reading than eating.

7. In problem 6, how much longer did he spend watching TV than reading? **7.**

He spent _____ hour more watching TV than reading.

8. In problem 6, how much time did he spend in all three activities? **8.**

He spent _____ hours.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Prime Factors

Any whole number that is greater than 1 and has only itself and 1 as factors is called a **prime number.**

$2=2\times1$ $7=7\times1$
$3=3\times1$ $11=11\times1$
$5=5\times1$ $13=13\times1$

Any whole number that is greater than 1 and is not a prime number is called a **composite number.**

$4=2\times2$ $9=3\times3$
$6=2\times3$ $10=2\times5$
$8=2\times4=2\times2\times2$ $12=2\times6=2\times2\times3$

Every composite number can be expressed as a product of **prime factors.**

$18=2\times3\times3$ $20=2\times2\times5$ $24=__\times__\times__\times__$ $30=__\times__\times__$

Write *P* after each prime number named below. Express each composite number as a product of prime factors.

	a	*b*	*c*
1.	19	21	27
2.	32	35	39
3.	41	48	49
4.	50	51	52
5.	69	75	88

Check your answers. Record your score. Perfect score: 15 My score: _____

Least Common Denominator

To find the **least common denominator** of $\frac{3}{4}$, $\frac{7}{18}$, and $\frac{5}{14}$:

Express each denominator as a product of prime factors.

$4 = 2 \times 2$
$18 = 2 \times 3 \times 3$
$14 = 2 \times 7$

Note the different numbers used as factors in any of the products.

2, 3, and 7

Use each of these factors the greatest number of times it occurs in any of the products.

$2 \times 2 \times 3 \times 3 \times 7 = 252$

The least common denominator of $\frac{3}{4}$, $\frac{7}{18}$, and $\frac{5}{14}$ is _____.

Find the least common denominator for each of the following.

	a	*b*	*c*
1.	$\frac{3}{8}$ and $\frac{5}{6}$	$\frac{9}{10}$ and $\frac{2}{5}$	$\frac{7}{8}$, $\frac{2}{3}$, and $\frac{3}{5}$
2.	$\frac{6}{7}$ and $\frac{5}{12}$	$\frac{7}{9}$ and $\frac{7}{12}$	$\frac{7}{15}$, $\frac{9}{10}$, and $\frac{11}{20}$
3.	$\frac{5}{8}$ and $\frac{2}{3}$	$\frac{4}{7}$ and $\frac{1}{5}$	$\frac{5}{12}$, $\frac{3}{8}$, and $\frac{9}{10}$
4.	$\frac{9}{16}$ and $\frac{11}{14}$	$\frac{5}{18}$ and $\frac{7}{24}$	$\frac{14}{15}$, $\frac{5}{6}$, and $\frac{8}{9}$
5.	$\frac{1}{14}$ and $\frac{5}{9}$	$\frac{5}{18}$ and $\frac{11}{24}$	$\frac{12}{13}$, $\frac{5}{6}$, and $\frac{1}{12}$
6.	$\frac{3}{20}$ and $\frac{5}{18}$	$\frac{1}{6}$ and $\frac{1}{24}$	$\frac{1}{8}$, $\frac{1}{9}$, and $\frac{1}{10}$

Check your answers. Record your score. Perfect score: 18 My score: _____

NAME _____

Addition and Subtraction

To add or subtract fractional numbers, first rename the numbers so they have the least common denominator. Then proceed as with numbers that have common denominators.

$$\begin{array}{r} \frac{3}{8} \\ \frac{1}{2} \\ +\frac{5}{6} \\ \hline \end{array} \quad \begin{array}{l} \rightarrow \frac{9}{24} \\ \rightarrow \frac{12}{24} \\ \rightarrow +\frac{20}{24} \\ \hline \end{array}$$

$$\frac{41}{24} = 1\frac{17}{24}$$

The least common denominator of $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{6}$ is _____.

$$\begin{array}{r} \frac{8}{9} \\ -\frac{4}{5} \\ \hline \end{array} \quad \begin{array}{l} \rightarrow \frac{40}{45} \\ \rightarrow -\frac{36}{45} \\ \hline \frac{4}{45} \end{array}$$

The least common denominator of $\frac{8}{9}$ and $\frac{4}{5}$ is _____.

Express each sum or difference in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{3}{5} + \frac{2}{3}$	$\frac{7}{8} + \frac{3}{4}$	$\frac{1}{6} + \frac{3}{8}$	$\frac{4}{9} + \frac{5}{12}$
2.	$\frac{1}{2} - \frac{2}{5}$	$\frac{9}{10} - \frac{1}{2}$	$\frac{2}{3} - \frac{1}{5}$	$\frac{9}{10} - \frac{3}{8}$
3.	$\frac{2}{3} + \frac{1}{2} + \frac{3}{4}$	$\frac{7}{8} + \frac{2}{5} + \frac{3}{8}$	$\frac{5}{6} + \frac{5}{8} + \frac{3}{10}$	$\frac{5}{6} + \frac{7}{12} + \frac{4}{15}$
4.	$\frac{8}{9} - \frac{1}{2}$	$\frac{11}{15} - \frac{3}{10}$	$\frac{7}{12} - \frac{11}{24}$	$\frac{17}{18} - \frac{5}{16}$

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Solve. Express each answer in simplest form.

1. Percy worked $\frac{5}{6}$ hour on Monday, $\frac{1}{2}$ hour on Tuesday, and $\frac{9}{10}$ hour on Wednesday. How many hours did he work on Monday and Tuesday?

He worked _____ hours on Monday and Tuesday.

1.

2. In problem **1**, did Percy work longer on Monday or Wednesday? How much longer did he work on that day?

He worked longer on _____.

He worked _____ hour longer.

2.

3. In problem **1**, how many hours did Percy work on all three days?

He worked _____ hours on all three days.

3.

4. The blue tape is $\frac{1}{2}$ inch wide, the red tape is $\frac{7}{8}$ inch wide, and the green tape is $\frac{3}{4}$ inch wide. What is the combined width of all three tapes?

The combined width is _____ inches.

4.

5. In problem **4**, is the red tape or green tape wider? How much wider is it?

The _____ tape is wider.

It is _____ inch wider.

5.

6. On a test, Brenda worked $\frac{7}{30}$ hour, Emma worked $\frac{7}{20}$ hour, and Laura worked $\frac{7}{15}$ hour. Which girl worked the least amount of time? How long did the other two girls work on the test?

_____ worked the least amount of time.

The other girls worked _____ hour.

6.

7. In problem **6**, how long did all three girls work on the test?

They worked _____ hours.

7.

Check your answers. Record your score. Perfect score: 10 My score: _____

NAME _____

Addition and Subtraction

$$\begin{array}{r} 4 \\ \frac{2}{3} \\ +5\frac{1}{2} \\ \hline \end{array} \longrightarrow \begin{array}{r} 4 \\ \frac{4}{6} \\ +5\frac{3}{6} \\ \hline 9\frac{7}{6} = 10\frac{1}{6} \end{array}$$

$9\frac{7}{6}$ is renamed as _____.

$$\begin{array}{r} 6 \\ -1\frac{3}{4} \\ \hline \end{array} \longrightarrow \begin{array}{r} 5\frac{4}{4} \\ -1\frac{3}{4} \\ \hline 4\frac{1}{4} \end{array}$$

6 is renamed as _____.

$$\begin{array}{r} 4\frac{1}{2} \\ -1\frac{3}{5} \\ \hline \end{array} \longrightarrow \begin{array}{r} 4\frac{5}{10} \\ -1\frac{6}{10} \\ \hline \end{array} \longrightarrow \begin{array}{r} 3\frac{15}{10} \\ -1\frac{6}{10} \\ \hline 2\frac{9}{10} \end{array}$$

$4\frac{5}{10}$ is renamed as _____.

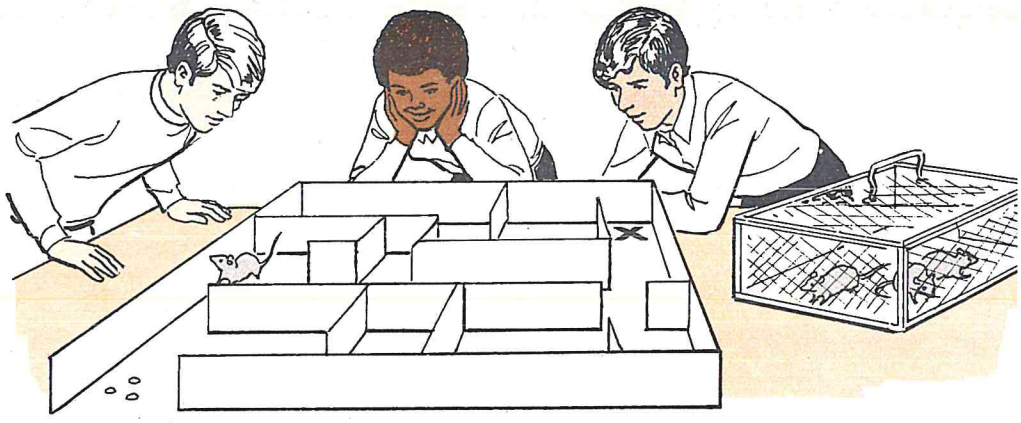
Express each sum or difference in simplest form.

	a	*b*	*c*	*d*
1.	3 $1\frac{2}{3}$ $+\ \frac{4}{5}$	$6\frac{1}{2}$ $\frac{3}{8}$ $+2\frac{1}{4}$	$9\frac{3}{5}$ $\frac{4}{9}$ $+\ \frac{1}{6}$	$3\frac{1}{2}$ $1\frac{4}{5}$ $+4\frac{2}{3}$
2.	7 $-\ \frac{7}{8}$	9 $-\ \frac{3}{10}$	6 $-2\frac{5}{12}$	4 $-3\frac{6}{7}$
3.	$5\frac{7}{8}$ $-3\frac{1}{2}$	$4\frac{1}{4}$ $-2\frac{1}{2}$	$6\frac{3}{5}$ $-2\frac{7}{8}$	$9\frac{7}{10}$ $-3\frac{2}{5}$
4.	$3\frac{1}{8}$ $+4\frac{6}{7}$	2 $-\ \frac{3}{4}$	$4\frac{1}{9}$ $-\ \frac{2}{3}$	$4\frac{5}{12}$ $2\frac{5}{6}$ $+3\frac{1}{8}$

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Maze Experiment	
mouse	*travel time*
A	2 minutes
B	$1\frac{5}{6}$ minutes
C	$\frac{3}{4}$ minute
D	$1\frac{3}{5}$ minutes



Solve. Express each answer in simplest form.

1. What was the total number of minutes it took both mouse A and mouse B to travel through the maze? **1.**

It took _____ minutes.

2. What was the total number of minutes it took both mouse B and mouse C to travel through the maze? **2.**

It took _____ minutes.

3. How many minutes less did it take mouse C to travel through the maze than mouse A? **3.**

It took _____ minutes less.

4. Did mouse B or mouse C take more time to travel through the maze? How many minutes longer did it take? **4.**

Mouse _____ took more time.

It took _____ minutes longer.

5. How many minutes did it take mouse A, mouse B, and mouse C to travel through the maze? **5.**

It took _____ minutes.

6. How many minutes longer did it take mice B and C than mouse D? **6.**

It took _____ minute longer.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME_____

TEST—Operations Involving Fractional Numbers

Express each of the following in simplest form.

	a	*b*	*c*	*d*
1.	$\frac{2}{3}\times\frac{2}{3}$	$\frac{4}{5}\times\frac{15}{16}$	$\frac{3}{10}\times\frac{8}{9}$	$\frac{1}{2}\times\frac{2}{3}\times\frac{3}{4}$
2.	$12\times7\frac{1}{2}$	$1\frac{4}{5}\times3\frac{1}{3}$	$\frac{8}{9}\times7\frac{1}{22}$	$4\times3\frac{1}{2}\times2\frac{3}{7}$
3.	$\frac{4}{5}\div\frac{5}{6}$	$\frac{7}{8}\div\frac{3}{10}$	$12\div1\frac{1}{8}$	$4\frac{2}{3}\div1\frac{1}{6}$
4.	$\frac{2}{5}$ $+\frac{2}{5}$	$\frac{7}{9}$ $+\frac{2}{3}$	$3\frac{3}{4}$ $4\frac{1}{2}$ $+2\frac{1}{3}$	$\frac{4}{5}$ $2\frac{3}{10}$ $+1\frac{1}{2}$
5.	$\frac{9}{10}$ $-\frac{3}{10}$	$\frac{6}{7}$ $-\frac{3}{8}$	7 $-2\frac{1}{4}$	$3\frac{2}{5}$ $-1\frac{7}{10}$

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Operations Involving Decimals

Add or subtract.

	a	*b*	*c*	*d*	*e*
1.	4.2 +5.3	1.2 7 8 +.8 3 1	4 5.8 9 +2.6	4.5 6 +.3 8 9	2 4 +.8 3 1
2.	.7 3 −.2 4	4 1.3 8 −2.4 7	6.4 1 3 −1.2 8	4 2.1 −1.6 8 7	3 8 −6.2 4
3.	1.4 2 4 .6 8 1 +.7 3 2	3.8 2 1 4.6 8 3 +.8	1 8 3.6 +7 0.2 1 9	5 2.7 4 −9.3 8	6 8.2 −1.5 3 9

Multiply or divide.

	a	*b*	*c*	*d*
4.	5.8 ×.6	7 3 ×.0 2	.4 9 ×.0 0 8	1 3.2 ×.0 7
5.	$4\overline{)7.6}$	$6\overline{).0\,2\,2\,8}$	$.6\overline{)1\,8\,9}$	$.08\overline{).4\,3\,2}$
6.	.6 8 3 ×3 2.4	7 2.0 8 ×.0 4 2	$4.2\overline{)1.5\,5\,4}$	$.26\overline{)9\,6.2}$

Check your answers. Record your score. Perfect score: 27 My score: _____

NAME_____

Changing Fractions and Mixed Numerals to Decimals

Any fraction that can be renamed with a denominator of 10, 100, 1000, and so on, can be expressed as a decimal naming tenths, hundredths, thousandths, and so on.

Change $\frac{3}{5}$ to tenths.

$\frac{3}{5}=\frac{3}{5}\times 1$
$=\frac{3}{5}\times\frac{2}{2}$ (Choose $\frac{2}{2}$ for 1 so the denominator will be 10.)
$=\frac{3\times 2}{5\times 2}$
$=\frac{6}{10}$
$=.6$

Change $3\frac{1}{4}$ to hundredths.

$3\frac{1}{4}=3+(\frac{1}{4}\times 1)$
$=3+(\frac{1}{4}\times\frac{25}{25})$
$=3+(\frac{1\times 25}{4\times 25})$
$=3+\frac{25}{100}$ or $3\frac{25}{100}$
$=3.25$

Change $\frac{9}{20}$ to thousandths.

$\frac{9}{20}=\frac{9}{20}\times 1$
$=\frac{9}{20}\times\frac{50}{50}$
$=\frac{9\times 50}{20\times 50}$
$=\frac{450}{1000}$
$=.450$

In changing $3+(\frac{1}{4}\times 1)$ to $3+(\frac{1}{4}\times\frac{25}{25})$, $\frac{25}{25}$ is chosen for 1 because _____ $\times 25=$ _____.

In changing $\frac{9}{20}\times 1$ to $\frac{9}{20}\times\frac{50}{50}$, $\frac{50}{50}$ is chosen for 1 because _____ $\times 50=$ _____.

Express each of the following as a decimal naming tenths.

	a	*b*	*c*
1.	$\frac{1}{5}=$ _____	$\frac{4}{5}=$ _____	$\frac{1}{2}=$ _____
2.	$4\frac{1}{5}=$ _____	$7\frac{4}{5}=$ _____	$12\frac{1}{2}=$ _____
3.	$18\frac{3}{5}=$ _____	$19\frac{1}{2}=$ _____	$124\frac{2}{5}=$ _____

Express each of the following as a decimal naming hundredths.

4.	$\frac{3}{4}=$ _____	$\frac{7}{10}=$ _____	$\frac{9}{20}=$ _____
5.	$8\frac{3}{4}=$ _____	$29\frac{7}{10}=$ _____	$42\frac{9}{20}=$ _____
6.	$12\frac{1}{2}=$ _____	$142\frac{9}{25}=$ _____	$513\frac{3}{5}=$ _____

Express each of the following as a decimal naming thousandths.

7.	$\frac{9}{500}=$ _____	$\frac{17}{250}=$ _____	$\frac{119}{200}=$ _____
8.	$3\frac{9}{500}=$ _____	$17\frac{17}{250}=$ _____	$12\frac{119}{200}=$ _____
9.	$18\frac{19}{20}=$ _____	$6\frac{49}{100}=$ _____	$124\frac{13}{40}=$ _____

Check your answers. Record your score. Perfect score: 27 My score: _____

Changing Decimals to Fractions or Mixed Numerals

Study how each decimal is changed to a fraction or mixed numeral in simplest form.

$2.7 = 2\frac{7}{10}$	$3.8 = 3\frac{8}{10}$ $= 3\frac{4}{5}$	$.45 = \frac{45}{100}$ $= \frac{\quad}{20}$	$.925 = \frac{925}{\quad}$ $= \frac{\quad}{40}$

Express each of the following as a fraction or mixed numeral in simplest form.

	a	*b*	*c*
1.	.7 = _____	.9 = _____	.3 = _____
2.	.6 = _____	.4 = _____	.8 = _____
3.	2.1 = _____	13.2 = _____	6.5 = _____
4.	.21 = _____	.09 = _____	.87 = _____
5.	.12 = _____	.02 = _____	1.75 = _____
6.	8.25 = _____	17.80 = _____	48.07 = _____
7.	.213 = _____	.018 = _____	.003 = _____
8.	.225 = _____	.050 = _____	.308 = _____
9.	2.004 = _____	16.117 = _____	5.555 = _____
10.	.75 = _____	.109 = _____	2.5 = _____
11.	7.060 = _____	19.03 = _____	38.3 = _____
12.	4.8 = _____	6.150 = _____	16.20 = _____
13.	.08 = _____	.325 = _____	6.76 = _____

Check your answers. Record your score. Perfect score: 39 My score: _____

NAME_____

Addition

Keep the decimal points aligned when adding with decimals. This ensures that you add tenths to tenths, add ones to ones, add tens to tens, and so on.

T	O	Ts	Hs	Ths
	1	1	1	
1	4.	8	1	4
	3.	5	5	1
	+.	4	3	6
1	8.	8	0	1

14.814 + 3.551 + .436 = _____

T	O	Ts	Hs	Ths
	1	1		
	1.	2	4	
4	5.	3		
+	2.	5	8	7
4	9.	1	2	7

1.24 + 45.3 + 2.587 = _____

Add.

	a	*b*	*c*	*d*	*e*
1.	.3 +.5	.6 +.5	4.6 +2.9	5.8 +7.6	3.4 +9.8
2.	.2 4 +.6 2	.0 3 +.4 0	$ .5 8 +.2 7	$ 4.5 6 +2.8 3	$ 1 4.3 8 +2 9.7 5
3.	.0 4 2 +.1 5 3	.2 4 6 +.1 7 3	.4 2 6 +.1 7 9	3.8 2 4 +6.2 9 2	4 2.3 7 5 +8 4.9 6 8
4.	.9 +.8 5	.1 2 7 +.5 6	3.9 6 5 +4.0 7	1 7.3 6 4 +4.9	5.3 0 8 +9 2.6 7
5.	.3 0 8 +.6	.4 6 +.2 0 7	6.0 5 +1 8.9	3.2 +.0 6 9	4 2.0 5 +2.7 8 3
6.	.1 2 6 .2 +.8 4	.8 9 .3 +.9 2 6	.4 6 3 4.2 +9.3 8 4	.9 1 4.6 2 5 +3.0 2	.4 2 4 2.3 +9.6 1 8

Check your answers. Record your score. Perfect score: 30 My score: _____

Problems

Solve each problem.

1. Mrs. Schultz bought two packages of meat. One package weighed .8 pound. The other weighed .6 pound. What is the combined weight of these two packages? **1.**

The combined weight was _____ pounds.

2. The thickness of a sheet of metal is .037 inch. This is .014 inch less than what it is supposed to be. How thick is the metal supposed to be? **2.**

It is supposed to be _____ inch thick.

3. The odometer readings on three cars are 4,216.7; 382.4; and 53,318.6. According to the odometers, what is the total number of miles the cars were driven? **3.**

The cars were driven _____ miles.

4. David made purchases at three stores. The amounts were $1.58; $3.97; and $.97. What was the total amount of his purchases? **4.**

The total amount was $_____.

5. Consider the numbers named by .328; 32.8; 3.28; and 328. What is the sum of the two greatest numbers? **5.**

The sum is _____.

6. In problem **5**, what is the sum of the two least numbers? **6.**

The sum is _____.

7. In problem **5**, what is the sum of all four of the numbers? **7.**

The sum is _____.

8. Able and Mable were asked to find the sum of 4.26; .364; 37; and .5. Able said the sum is 41.629 and Mable said the sum is 42.124. Who is correct? **8.**

_____ is correct.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Subtraction

T	O	Ts	Hs	Ths
	3	7.	4	3	8
−	2	5.	2	6	7
	1	2.	1	7	1

37.438 − 25.267 = _____

T	O	Ts	Hs	Ths
	4	2.	3	4	5
−		8.	1		
	3	4.	2	4	5

42.345 − 8.1 = _____

T	O	Ts	Hs	Ths
	2	5.	0	0	0
−	1.	0	7	5	
	2	3.	9	2	5

25 − 1.075 = _____

When subtracting with decimals, it is helpful to use 0's in cases like 25 − 1.075.

Subtract.

	a	*b*	*c*	*d*	*e*
1.	.9 − .3	.47 − .18	.924 − .831	4.734 − 2.685	52.613 − 14.082
2.	.736 − .142	4.35 − 2.96	$13.08 − 12.50	3.416 − 2.037	$423.25 − 126.83
3.	.35 − .2	.516 − .38	4.26 − .4	12.563 − 4.27	563.02 − 34.6
4.	.126 − .04	1.37 − .4	32.65 − 1.7	34.29 − 21.6	42.318 − 10.24
5.	8 − 3.6	9.5 − 2.61	9.8 − 3.217	42.83 − 1.046	65 − 1.275
6.	.6 − .384	7 − .238	4.6 − 1.273	34.2 − .008	36.2 − .625
7.	.4 − .318	2.26 − .423	6.082 − .14	7.112 − .4	42.08 − 40.006

Check your answers. Record your score. Perfect score: 35 My score: _____

Problems

Solve each problem.

1. Naomi has two packages that weigh a total of 4.8 pounds. One package weighs 1.9 pounds. How much does the other package weigh?

The other package weighs _____ pounds.

1.

2. Fred needs $1.43 to purchase a model car. He now has $.75. How much more money does he need in order to buy the model car?

He needs $_____ more.

2.

3. The average yearly rainfall for Rhodes County is 35.50 inches. Last year 29.75 inches of rain were recorded. How many inches below average was this?

It was _____ inches below average.

3.

4. Two sheets of plastic have a combined thickness of 1.080 inches. One sheet is .675 inch thick. What is the thickness of the other sheet?

The other sheet is _____ inch thick.

4.

5. Consider the numbers named by 4.32; 432; 43.2; and .432. What is the difference between the two greatest numbers?

The difference is _____.

5.

6. In problem **5**, what is the difference between the two least numbers?

The difference is _____.

6.

7. In problem **5**, what is the difference between the greatest number and the least number?

The difference is _____.

7.

8. Jane gave the clerk a $20 bill. The amount of her purchases was $17.14. How much change should she receive?

She should receive $_____ change.

8.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME_____

Addition and Subtraction

To find the sum, rewrite 213 + 4.2 + .635 + 13.54 as follows. Then add.

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 213 \\ 4.2 \\ .635 \\ +13.54 \\ \hline 231.375 \end{array}$$

213 + 4.2 + .635 + 13.54 = _____

To find the difference, rewrite 4.3 − .168 as follows. Then subtract.

$$\begin{array}{r} {\scriptstyle 2\ 10\ 10} \\ 4.3\not{0}\not{0} \\ -.168 \\ \hline 4.132 \end{array}$$

4.3 − .168 = _____

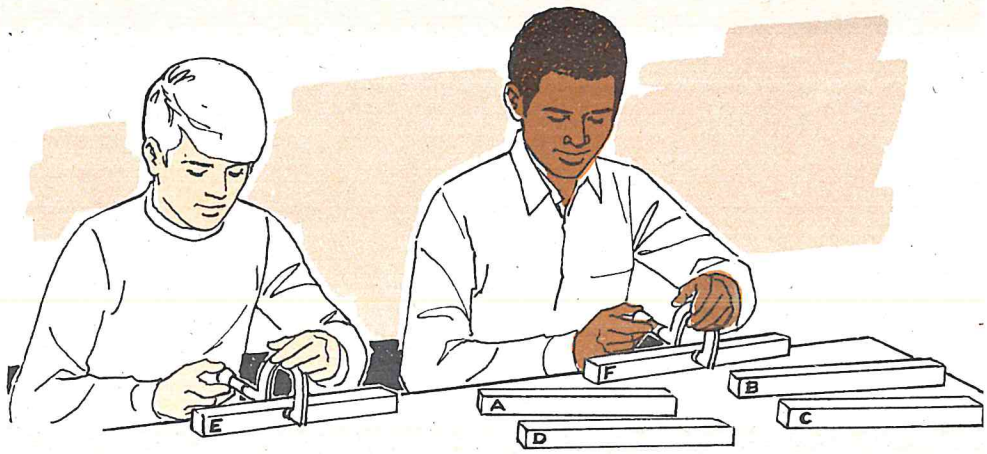
Add or subtract.

1. 14.3 + 2.687 = _____
2. 5.08 − 1.2 = _____
3. 15.92 + .038 = _____
4. 4.608 − 2.9 = _____
5. 14.213 + 1.425 + 3.16 = _____
6. 17 − 1.835 = _____
7. 3.082 + 16.4 + 6.42 = _____
8. 4.3 − .987 = _____
9. 4.2 + 38 + .04 + 1.163 = _____
10. 5.62 − 1.8 = _____
11. .54 + 2.8 + 3.017 + .24 = _____
12. 17.93 − 8 = _____

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Bar	*Measurement*
A	.986 inch
B	.432 inch
C	1.035 inches
D	1.008 inches



Solve each problem.

1. The pupils are using micrometers to measure the thickness of metal bars. They have recorded some measurements on the chart. What is the combined thickness of bars **A** and **B**? **1.**

The combined thickness is _____ inches.

2. Suppose the pupils place the thickest and the thinnest bars on top of each other. What would the combined thickness be? **2.**

The combined thickness would be _____ inches.

3. How much thicker is bar **D** than bar **B**? **3.**

Bar **D** is _____ inch thicker.

4. What is the difference between the measurements of the thickest and the thinnest bars? **4.**

The difference is _____ inch.

5. What is the total thickness of all four bars? **5.**

The total thickness is _____ inches.

6. Bar **A** is placed on top of bar **C** and bar **B** is placed on top of bar **D**. Is the total thickness of **A** and **C** more or less than the total thickness of **B** and **D**? By how much? **6.**

The thickness of **A** and **C** is _____ than **B** and **D**.

The difference is _____ inch.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Multiplication

number of digits after the decimal point

321	3.21	2	3.21	2	.321	3
×4	×4	+0	×.4	+1	×.04	+2
1284	12.84	2	1.284	3	.01284	5

$12 \times 27 = 324$, so $12 \times 2.7 =$ _____

and $12 \times .027 =$ _____.

$22 \times 18 = 396$, so $2.2 \times 1.8 =$ _____

and $.022 \times 1.8 =$ _____.

Multiply.

	a	*b*	*c*	*d*	*e*
1.	.2 3 ×6	.4 0 ×2	1.6 ×4	.3 2 4 ×5	4 3.1 ×7
2.	3 2 ×.3	4 2 ×.8	5.1 ×.2	.7 3 4 ×.9	2.1 6 ×.6
3.	.2 3 ×.0 4	.1 7 ×.0 5	2.5 ×.0 3	7.0 9 ×.0 2	.8 6 3 ×.0 4
4.	.4 2 ×.0 0 6	3.8 ×.0 0 8	.7 6 ×.0 0 4	5 1.2 ×.0 0 4	8.0 6 ×.0 0 3
5.	3 1 6 ×.0 3	2.0 4 ×.7	.7 1 5 ×.9	3 1.8 ×.0 4	6.1 9 ×.0 5
6.	4.2 1 ×.3	6 1.3 ×.0 8	3 0.8 ×.0 0 9	2.0 9 ×.0 2	4 1.6 ×.0 3
7.	3.2 4 ×5	6 8 7 ×.0 3	4.1 8 ×.0 9	3 1 7 ×.8	.6 1 7 ×4

Check your answers. Record your score. Perfect score: 35 My score: _____

Problems

Solve each problem.

1. A gallon of water weighs about 8.34 pounds. How many pounds would 9 gallons of water weigh?

Nine gallons would weigh _____ pounds.

1.

2. There are a dozen boopers to a case. Each booper weighs .54 pound. How much would a case of boopers weigh?

A case would weigh _____ pounds.

2.

3. A container holds 7.481 gallons. How many gallons would 12 of these containers hold?

They would hold _____ gallons.

3.

4. In 1 hour, 18.5 tons of ore can be processed. At that rate, how much ore can be processed in 7.5 hours?

_____tons would be processed.

4.

5. In problem 4, how many tons would be processed in .75 hour?

_____ tons would be processed.

5.

6. Consider the numbers named by 5.06; .506; 506; .0506; and 50.6. What is the product of the two greatest numbers?

The product is _____.

6.

7. In problem 6, what is the product of the least number and the greatest number?

The product is _____.

7.

8. Mark bought 8.2 gallons of gasoline at $.45 a gallon. How much did the gasoline cost?

The gasoline cost $_____.

8.

9. What is the product of 42; .06; and 1.3?

The product is _____.

9.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Multiplication

Multiply.

	a	*b*	*c*	*d*	*e*
1.	2.5 ×.3 7	4 2.1 ×.3 8	3 1 6.4 ×2.6	2.1 6 ×2 4.2	.0 4 2 1 ×3 2.1
2.	4 3 ×.2 8	4 8.6 ×3.1	.0 3 8 2 ×4 1	.3 1 8 ×4.1 2	.0 3 1 6 ×1 1.2
3.	.3 1 ×.1 6	7.3 1 ×.2 4	4 2.1 0 ×.1 3	3 0.8 ×.1 4 1	.0 4 1 2 ×3 0.6
4.	8.4 ×9.2	.5 1 3 ×2.6	3.1 6 0 ×4.3	2.0 4 ×1 0.5	1 2.1 1 ×4 0.1
5.	.3 6 ×7.5	4.0 8 ×3.6	4 0 7.5 ×.3 2	.0 3 2 ×4.2 1	2 1 4.2 ×.1 2 3
6.	9.6 ×.8 3	3 1.2 ×4.3	.0 3 8 6 ×2.3	3 2.4 ×.0 1 8	3 1.4 4 ×.2 3 1

Check your answers. Record your score. Perfect score: 30 My score: _____

Problems

Solve each problem.

1. The bakery uses 42.5 pounds of flour for each batch of bread. How many pounds of flour would be needed for 8.5 batches of bread?

_____ pounds would be needed. **1.**

2. Each inch of wire weighs .016 pound. How many pounds would 3.75 inches of wire weigh?

3.75 inches of wire would weigh _____ pound. **2.**

3. Mildred's car averages 12.4 miles on each gallon of gasoline. At that rate how far could the car travel by using 7.8 gallons of gasoline?

The car could travel _____ miles. **3.**

4. The jet averaged 425.8 miles an hour. At that rate how far did the jet travel in 7.5 hours?

The jet traveled _____ miles. **4.**

5. Consider the numbers .775; .32; .018; and .46. What is the product of the two least numbers?

The product is _____. **5.**

6. In problem 5, what is the product of the two greatest numbers?

The product is _____. **6.**

7. Nancy found the product of 18.2 and .34. Eileen found the product of 3.4 and 1.82. What product should Nancy have found? What product should Eileen have found?

Nancy should have found _____.

Eileen should have found _____. **7.**

8. There are 167.5 gallons of fuel oil in a tank. Each gallon of oil weighs 7.37 pounds. What is the total weight of the oil in the tank?

The total weight of the oil is _____ pounds. **8.**

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Division

When dividing a number like 2.8; .28; or .028 by any whole number, place the decimal point in the quotient directly above the decimal point in the dividend.

	Check
.4	
7|2.8	7
28	×.4
0	2.8

	Check
.04	
7|.28	7
28	×.04
0	.28

	Check
.004	
7|.028	7
28	×.004
0	.028

65 ÷ 13 = 5, so 6.5 ÷ 13 = _____; .65 ÷ 13 = _____; and .065 ÷ 13 = _____.

Divide.

	a	*b*	*c*	*d*
1.	4|.64	2|3.6	6|74.4	3|.954
2.	5|.45	7|.056	4|.092	3|.0081
3.	3|.012	2|.008	9|.072	4|.0072
4.	3|.054	4|.068	3|.084	6|.0084

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Solve each problem.

1. A box of bolts weighs 2.94 pounds. There are 7 bolts in the box and each weighs the same amount. How many pounds does each bolt weigh?

Each bolt weighs _____ pound.

1.

2. Three boys together weigh 282.6 pounds. Suppose each boy weighs the same. How much does each boy weigh?

Each boy weighs _____ pounds.

2.

3. A wire 15.3 inches long is to be separated into 9 pieces, each the same length. How long will each piece of wire be?

Each piece will be _____ inches long.

3.

4. Six sheets of paper have a total thickness of .072 inch. Each sheet has the same thickness. How thick is each sheet?

Each sheet is _____ inch thick.

4.

5. In 5 hours, 1.85 tons of ore were processed. The same amount was processed each hour. How many tons were processed each hour?

_____ ton was processed each hour.

5.

6. There are 3.76 quarts of oil to be put into 4 containers. The same amount is to be put into each container. How much oil will be put into each container?

_____ quart will be in each container.

6.

7. A stack of film has a thickness of .174 inch. Each of the 6 sheets in the stack has the same thickness. How thick is each sheet?

Each sheet is _____ inch thick.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Division

$.9\overline{).45}$ → To get a whole number divisor, multiply both .9 and .45 by 10. →

$$\begin{array}{r} .5 \\ 9\overline{)4.5} \\ 45 \\ \hline 0 \end{array}$$

shorter way

$$\begin{array}{r} .5 \\ .9\overline{)\,.45} \\ 45 \\ \hline 0 \end{array}$$

Check: $.5 \times .9 =$ _____

$.03\overline{)4.8}$ → To get a whole number divisor, multiply both .03 and 4.8 by 100. →

$$\begin{array}{r} 160 \\ 3\overline{)480} \\ 300 \\ \hline 180 \\ 180 \\ \hline 0 \\ 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 160 \\ .03\overline{)4.80} \\ 300 \\ \hline 180 \\ 180 \\ \hline 0 \\ 0 \\ \hline 0 \end{array}$$

Check: $160 \times .03 =$ _____

Divide.

	a	*b*	*c*	*d*
1.	$.8\overline{)\,9.6}$	$.3\overline{)\,.2\,8\,2}$	$.6\overline{)\,2.1\,6}$	$.4\overline{)\,.0\,1\,3\,6}$
2.	$.4\overline{)\,7\,2}$	$.08\overline{)\,1\,1\,2}$	$.03\overline{)\,3\,4\,5}$	$.002\overline{)\,1\,4}$
3.	$.03\overline{)\,.6}$	$.07\overline{)\,8.4}$	$.005\overline{)\,7\,5}$	$.9\overline{)\,2\,0.7}$

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Solve each problem.

1. Joe divided 1.38 by .6 and Jim divided 1.38 by 2.3. What should Joe's answer be? What should Jim's answer be?

Joe's answer should be _____.

Jim's answer should be _____.

1.

2. A stack of paper is 3.44 inches thick. How many stacks of paper each .8 inch thick could be formed? How thick would the partial stack be?

There could be _____ stacks formed.

The partial stack would be _____ inch thick.

2.

3. Consider the numbers named by .032 and .08. What is the quotient if you divide the least number by the greatest number?

The quotient is _____.

3.

4. In problem 3, what is the quotient if you divide the greatest number by the least number?

The quotient is _____.

4.

5. Arlene divided .692 by .4 and obtained an answer of .173. Trina divided .692 by .4 and obtained an answer of 17.3. Is either girl correct? What is the correct answer?

Is either girl correct? _____

The correct answer is _____.

5.

6. Consider the numbers named by .004 and .2. What is the quotient if you divide the greatest number by the least number?

The quotient is _____.

6.

7. In problem 6, what is the quotient if you divide the least number by the greatest number?

The quotient is _____.

7.

Check your answers. Record your score. Perfect score: 10 My score: _____

NAME _____

Division

Divide.

	a	*b*	*c*	*d*
1.	$.04\overline{)\,.072}$	$1.2\overline{)\,324}$	$.22\overline{)\,184.8}$	$.15\overline{)\,21}$
2.	$.05\overline{)\,53.5}$	$.16\overline{)\,2.08}$	$2.5\overline{)\,.0625}$	$3.2\overline{)\,48}$
3.	$.06\overline{)\,1.62}$	$1.7\overline{)\,2.21}$	$.23\overline{)\,1288}$	$.46\overline{)\,161}$
4.	$.003\overline{)\,.081}$	$.014\overline{)\,.252}$	$.034\overline{)\,14.62}$	$.036\overline{)\,19.8}$
5.	$.008\overline{)\,2.72}$	$.43\overline{)\,51.6}$	$.021\overline{)\,.0399}$	$.016\overline{)\,24}$

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem.

1. Barbara multiplied a number by .16 and got the product .0192. What was the number?

The number was _____.

1.

2. Consider the numbers named by .18; 1.8; and .018. What is the quotient if you divide the greatest number by the least number?

The quotient is _____.

2.

3. In problem 2, what is the quotient if you divide the least number by the greatest number?

The quotient is _____.

3.

4. At $.42 a gallon, how many gallons of gasoline could you purchase with $6.93?

You could purchase _____ gallons.

4.

5. Mrs. Peterson bought some meat that cost $.65 a pound. How many pounds of meat did she buy if the bill was $2.08?

She bought _____ pounds of meat.

5.

6. Mr. Mills paid $4.25 for 3.4 pounds of grass seed. How much did the grass seed cost per pound?

The seed cost $_____ per pound.

6.

7. Ann is to divide 57.76 by 7.6 and Trudy is to divide 577.6 by .76. What quotient should Ann get? What quotient should Trudy get?

Ann should get _____.

Trudy should get _____.

7.

8. Tom multiplied .012 by some number and got the product .00516. What was the number?

The number was _____.

8.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Addition, Subtraction, Multiplication, and Division

Add or subtract.

1. $31.9 + 42.8 + 61.3 =$ _____

2. $3.72 - 1.4 =$ _____

3. $32.91 + .47 + 1.6 =$ _____

4. $5.4 - 2.45 =$ _____

5. $751 - 7.51 =$ _____

6. $423 + .423 + 4.23 =$ _____

7. $3.18 - 2.486 =$ _____

Multiply or divide.

8. $6 \times 24.1 =$ _____

9. $44.1 \div 7 =$ _____

10. $.007 \times 3.2 =$ _____

11. $7.62 \div .06 =$ _____

12. $4.21 \times 4.21 =$ _____

13. $4.92 \div .012 =$ _____

14. $1.3 \times .4163 =$ _____

Check your answers. Record your score. Perfect score: 14 My score: _____

Problems

Solve each problem.

1. Consider the numbers named by .034; 2.35; 3; .74; and 5.95. What is the difference between the two least numbers? **1.**

The difference is _____.

2. In problem **1**, what is the product of the two greatest numbers? **2.**

The product is _____.

3. In problem **1**, what is the quotient if you divide the greatest number by the least number? **3.**

The quotient is _____.

4. In problem **1**, what is the sum of all five of the numbers? **4.**

The sum is _____.

5. Cherry multiplied some number by 4.8 and got the product .624. What was the number? **5.**

The number was _____.

6. A bar is 3.450 inches wide. This is .065 inch too wide. How wide is the bar supposed to be? **6.**

The bar is supposed to be _____ inches wide.

7. At $.98 per pound, how much would it cost for a 7.5 pound roast? **7.**

It would cost $_____.

8. It cost Mr. Adams $3.99 for 9.5 gallons of gasoline. At that rate how much does 1 gallon of gasoline cost? **8.**

One gallon costs $_____.

9. Babe Ruth's lifetime batting average was .342. Ty Cobb's lifetime batting average was .367. Which player had the higher average? How much higher was his average? **9.**

_____ had the higher average.

His average was _____ higher.

Check your answers. Record your score. Perfect score: 10 My score: _____

NAME _____

TEST—Operations Involving Decimals

Add or subtract.

	a	*b*	*c*	*d*
1.	.47 +1.83	12.965 4.782 +3.986	4.01 27.1 +83	.067 1.38 +16.425
2.	34.182 −16.453	4.21 −.84	4.1 −1.68	27 −1.289

Multiply or divide.

3.	17.3 ×.5	.68 ×.3	.72 ×.09	.16 ×7
4.	$6\overline{)8.4}$	$9\overline{).1278}$	$.5\overline{).1565}$	$.07\overline{)294}$
5.	42.13 ×.034	72.9 ×8.36	$2.6\overline{)12.22}$	$.32\overline{).1312}$

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Ratio and Proportion

Express each of the following as a ratio in three ways as shown.

		a	*b*	*c*
1.	8 runs in 6 innings	8 to 6	8:6	$\frac{8}{6}$
2.	2 pies for 10 persons			
3.	8 books to 2 tables			
4.	3 assignments in 5 days			

Draw a ring around each pair of ratios which are equivalent.

	a	*b*
5.	$\frac{5}{8}, \frac{15}{24}$	$\frac{7}{12}, \frac{11}{18}$
6.	$\frac{3}{4}, \frac{16}{20}$	$\frac{2}{3}, \frac{32}{48}$
7.	$\frac{4}{5}, \frac{24}{30}$	$\frac{5}{6}, \frac{20}{24}$

Solve each of the following.

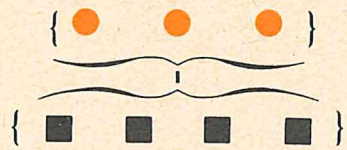
	a	*b*
8.	$\frac{7}{9}=\frac{21}{n}$	$\frac{2}{3}=\frac{n}{24}$
9.	$\frac{n}{13}=\frac{35}{65}$	$\frac{8}{n}=\frac{4}{3}$
10.	$\frac{3}{5}=\frac{n}{100}$	$\frac{n}{7}=\frac{20}{28}$

Check your answers. Record your score. Perfect score: 21 My score: _____

NAME _____

Ratio

A **ratio** is a comparison of the numbers of two sets.



3 to 4 3:4 $\frac{3}{4}$

_____ to _____ _____:_____ _____

Express each of the following as a ratio in three ways as shown.

		a	*b*	*c*
1.	1 pen to 4 pencils	1 to 4	1:4	$\frac{1}{4}$
2.	9 chairs to 2 tables	_____	_____	_____
3.	3 books for 6 students	_____	_____	_____
4.	8 hits for 9 innings	_____	_____	_____
5.	3 teachers for 60 students	_____	_____	_____
6.	15 candy bars for 5 boys	_____	_____	_____
7.	6 miles in 2 hours	_____	_____	_____
8.	6 pages in 30 minutes	_____	_____	_____
9.	3 quarts for 1 dollar	_____	_____	_____
10.	4 dollars for 3 children	_____	_____	_____

Check your answers. Record your score. Perfect score: 27 My score: _____

Proportions

A **proportion** expresses the equality of two ratios.

$\frac{2}{3}=\frac{4}{6}$ $\frac{1}{5}=\frac{4}{20}$ $\frac{3}{4}=\frac{9}{12}$ $\frac{n}{6}=\frac{10}{12}$

Study how you can determine if two ratios are equivalent.

$\frac{1}{4}\neq\frac{2}{8}$ $4\times2=8$, $1\times8=8$

$\frac{1}{4}=\frac{2}{8}$ since $1\times8=4\times2$.

$\frac{3}{5}\neq\frac{6}{10}$ $5\times6=30$, $3\times10=30$

$\frac{3}{5}=\frac{6}{10}$ since $___\times___=___\times___$.

Draw a ring around each pair of ratios which are equivalent.

	a	*b*
1.	$\frac{2}{3}, \frac{6}{9}$	$\frac{7}{8}, \frac{13}{16}$
2.	$\frac{5}{16}, \frac{11}{32}$	$\frac{4}{5}, \frac{8}{10}$
3.	$\frac{5}{8}, \frac{10}{16}$	$\frac{3}{4}, \frac{16}{20}$
4.	$\frac{1}{6}, \frac{2}{12}$	$\frac{3}{7}, \frac{9}{14}$
5.	$\frac{3}{9}, \frac{1}{3}$	$\frac{3}{2}, \frac{18}{12}$
6.	$\frac{5}{6}, \frac{9}{12}$	$\frac{6}{16}, \frac{3}{8}$
7.	$\frac{16}{20}, \frac{9}{10}$	$\frac{15}{24}, \frac{5}{8}$
8.	$\frac{10}{12}, \frac{4}{5}$	$\frac{12}{16}, \frac{3}{4}$
9.	$\frac{7}{25}, \frac{28}{100}$	$\frac{9}{20}, \frac{48}{100}$
10.	$\frac{5}{16}, \frac{4}{12}$	$\frac{7}{8}, \frac{21}{24}$

Check your answers. Record your score. Perfect score: 20 My score: _____

NAME _____

Proportions

Study how a proportion can be used in problem solving.

The ratio of the number of boys in the choir to the number of girls in the choir is 6 to 7. If there are 24 boys in the choir, how many girls are in the choir?

$\frac{6}{7}=\frac{24}{n}$ — There are 24 boys in the choir. Let n represent the number of girls in the choir.

$6\times n=7\times 24$ What must $6\times n$ be divided by to obtain n? _____

$\frac{6\times n}{6}=\frac{7\times 24}{6}$ Since $6\times n$ is divided by 6, 7×24 must also be divided by _____.

$\frac{\cancel{6}^{1}\times n}{\cancel{6}_{1}}=\frac{7\times \cancel{24}^{4}}{\cancel{6}_{1}}$

$n=7\times 4$ or 28. There are _____ girls in the choir.

Solve each of the following.

	a	*b*	*c*
1.	$\frac{7}{8}=\frac{14}{n}$	$\frac{5}{24}=\frac{10}{n}$	$\frac{7}{12}=\frac{21}{n}$
2.	$\frac{10}{6}=\frac{5}{n}$	$\frac{35}{40}=\frac{7}{n}$	$\frac{9}{10}=\frac{90}{n}$
3.	$\frac{7}{9}=\frac{35}{n}$	$\frac{4}{6}=\frac{2}{n}$	$\frac{27}{36}=\frac{3}{n}$
4.	$\frac{4}{16}=\frac{2}{n}$	$\frac{17}{51}=\frac{1}{n}$	$\frac{2}{14}=\frac{10}{n}$

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Use a proportion to solve each problem.

1. A baseball team has won 14 games. The ratio of games won to games played is 7 to 12. How many games has the team played?

The team has played _____ games.

1.

2. A cleaning concentrate is to be mixed with water so that the ratio of water to concentrate is 8 to 1. At that rate how much concentrate should be mixed with 16 quarts of water?

_____ quarts of concentrate should be mixed with 16 quarts of water.

2.

3. The ratio of boys to girls at Lincoln School is 11 to 10. There are 330 boys at the school. How many girls are there?

There are _____ girls at the school.

3.

4. At the cafeteria the ratio of pints of chocolate milk sold to pints of plain milk sold is 4 to 7. At this rate how many pints of plain milk will be sold if 100 pints of chocolate milk are sold?

_____ pints of plain milk will be sold.

4.

5. During a Cougars' basketball game, the ratio of baskets made to baskets attempted was 2 to 5. The Cougars made 26 baskets. How many baskets did they attempt?

They attempted _____ baskets.

5.

6. The park department planted oak and maple trees in a 5 to 7 ratio. They planted 105 oaks. How many maples did they plant?

They planted _____ maples.

6.

7. On a spelling test, the ratio of words Dawn spelled correctly to those she misspelled was 4 to 1. She spelled 20 words correctly. How many did she misspell?

She misspelled _____ words.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Proportions

Study how the proportions below are solved.

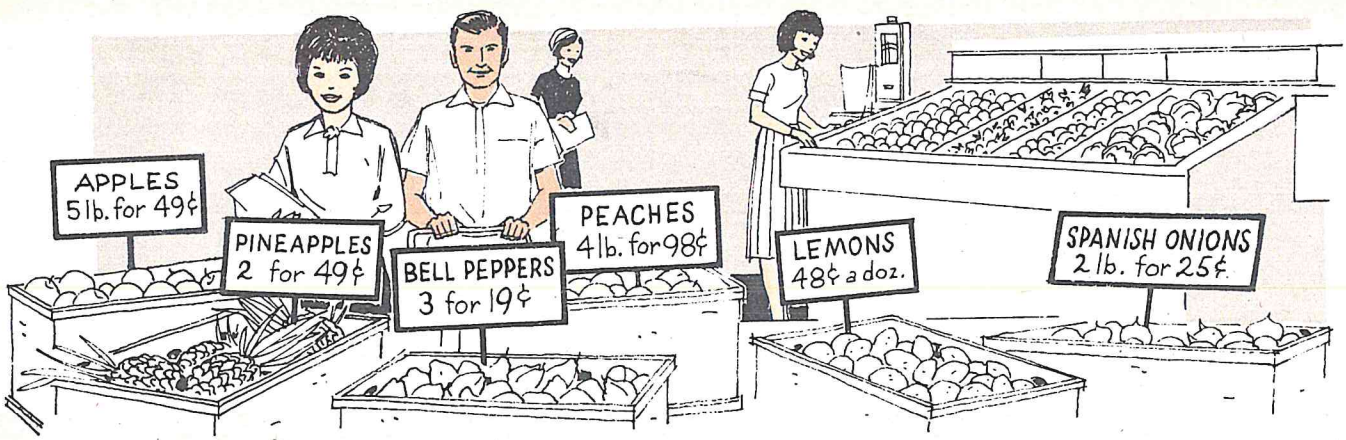
$\frac{7}{8}=\frac{21}{n}$	$\frac{2}{3}=\frac{n}{12}$	$\frac{1}{n}=\frac{5}{20}$	$\frac{n}{2}=\frac{12}{6}$
$7\times n=8\times 21$	$2\times 12=3\times n$	$1\times 20=n\times 5$	$n\times 6=2\times 12$
$\frac{7\times n}{7}=\frac{8\times 21}{7}$	$\frac{2\times 12}{3}=\frac{3\times n}{3}$	$\frac{1\times 20}{5}=\frac{n\times 5}{5}$	$\frac{n\times 6}{6}=\frac{2\times 12}{6}$
$\frac{\cancel{7}^{1}\times n}{\cancel{7}_{1}}=\frac{8\times \cancel{21}^{3}}{\cancel{7}_{1}}$	$\frac{2\times \cancel{12}^{4}}{\cancel{3}_{1}}=\frac{\cancel{3}^{1}\times n}{\cancel{3}_{1}}$	$\frac{1\times \cancel{20}^{4}}{\cancel{5}_{1}}=\frac{n\times \cancel{5}^{1}}{\cancel{5}_{1}}$	$\frac{n\times \cancel{6}^{1}}{\cancel{6}_{1}}=\frac{2\times \cancel{12}^{2}}{\cancel{6}_{1}}$
$n=8\times 3$	$2\times 4=n$	$1\times 4=n$	$n=2\times 2$
$n=24$	$____=n$	$____=n$	$n=____$

Solve each of the following.

	a	*b*	*c*
1.	$\frac{3}{8}=\frac{6}{n}$	$\frac{7}{9}=\frac{n}{27}$	$\frac{n}{30}=\frac{5}{6}$
2.	$\frac{5}{n}=\frac{35}{49}$	$\frac{3}{4}=\frac{n}{100}$	$\frac{n}{32}=\frac{3}{8}$
3.	$\frac{n}{6}=\frac{6}{9}$	$\frac{10}{n}=\frac{5}{8}$	$\frac{3}{5}=\frac{n}{10}$
4.	$\frac{8}{11}=\frac{n}{99}$	$\frac{7}{8}=\frac{n}{1000}$	$\frac{n}{56}=\frac{7}{8}$

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems



Use a proportion to solve each problem.

1. Mrs. Fisher wants to buy 10 pounds of apples. What would be the cost if she buys the kind of apples shown above?

The cost would be _____¢.

1.

2. What would be the cost of 4 of the pineapples shown above?

The cost would be _____¢.

2.

3. What would be the cost of 2 pounds of the peaches shown above?

The cost would be _____¢.

3.

4. What would be the cost of a dozen of the bell peppers shown above?

The cost would be _____¢.

4.

5. Mr. Sims needs 3 lemons. What would be the cost of these lemons?

The cost would be _____¢.

5.

6. What would be the cost of 6 pounds of the Spanish onions shown above?

The cost would be _____¢.

6.

Check your answers. Record your score. Perfect score: 6 My score: _____

NAME _____

Proportions

A certain machine can produce 7 items in 2 hours. At that rate, how many items can be produced in 8 hours?

If n represents the number of items produced in 8 hours, the proportions below can be obtained by thinking as follows.

Compare the number of items to the number of hours.	Compare the number of hours to the number of items.	Compare the first amount of time to the second and the first number of items to the second.	Compare the second amount of time to the first and the second number of items to the first.
$\frac{7}{2}=\frac{n}{8}$	$\frac{2}{7}=\frac{8}{n}$	$\frac{2}{8}=\frac{7}{n}$	$\frac{8}{2}=\frac{n}{7}$
$7\times 8=2\times n$	$2\times n=7\times 8$	$2\times n=8\times 7$	$8\times 7=2\times n$
$\frac{7\times 8}{2}=\frac{2\times n}{2}$	$\frac{2\times n}{2}=\frac{7\times 8}{2}$	$\frac{2\times n}{2}=\frac{8\times 7}{2}$	$\frac{8\times 7}{2}=\frac{2\times n}{2}$
$____=n$	$n=____$	$n=____$	$____=n$

In solving the following problems, consider several proportions. Then solve whichever of the proportions is easiest for you.

1. In 3 hours, 225 cases of candy can be produced. At that rate, how much candy can be produced in 8 hours?

   _____ cases can be produced.

1.

2. Jim weighs 120 pounds and can lift 80 pounds above his head. To lift in the same ratio, how much weight should a 150-pound boy lift?

   He should lift _____ pounds.

2.

3. A duplicating machine can produce 50 copies in 2 minutes. At that rate, how long will it take to produce 150 copies?

   It will take _____ minutes.

3.

4. Six cases of merchandise weigh 180 pounds. How much would 10 such cases weigh?

   The total weight would be _____ pounds.

4.

Check your answers. Record your score. Perfect score: 4 My score: _____

Problems

Use a proportion to solve each problem.

1. A recipe for making 12 cupcakes calls for 2 cups of flour. How much flour would be needed to make 18 cupcakes? 1.

_____ cups of flour would be needed.

2. The sales tax on a $100 purchase is $5. How much would the sales tax be on a $40 purchase? 2.

The sales tax would be $_____.

3. On a map each inch represents 60 miles. What is the distance between two towns which are represented 5 inches apart on the map? 3.

The distance is _____ miles.

4. Three bushels of apples weigh 105 pounds. How much would 2 bushels of apples weigh? 4.

Two bushels would weigh _____ pounds.

5. To make a certain grade of concrete, 2 bags of cement are mixed with 300 pounds of sand. How much sand should be mixed with 12 bags of cement? 5.

_____ pounds of sand should be mixed with 12 bags of cement.

6. A baseball player is hitting 2 home runs in every 25 times at bat. Suppose he continues at that rate. How many home runs will he hit in 550 times at bat? 6.

He will hit _____ home runs.

7. A 3-inch by 5-inch photograph is enlarged so that the longer side is 15 inches. What is the length of the shorter side of the enlarged photograph? 7.

It is _____ inches long.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Proportions

Solve each of the following.

	a	*b*	*c*
1.	$\frac{n}{2}=\frac{5}{10}$	$\frac{n}{1}=\frac{28}{7}$	$\frac{n}{15}=\frac{4}{12}$
2.	$\frac{3}{7}=\frac{n}{56}$	$\frac{75}{100}=\frac{n}{8}$	$\frac{26}{16}=\frac{n}{8}$
3.	$\frac{4}{n}=\frac{24}{36}$	$\frac{15}{n}=\frac{35}{28}$	$\frac{14}{n}=\frac{7}{13}$
4.	$\frac{1}{6}=\frac{16}{n}$	$\frac{15}{75}=\frac{4}{n}$	$\frac{21}{49}=\frac{3}{n}$
5.	$\frac{n}{15}=\frac{64}{12}$	$\frac{11}{24}=\frac{n}{72}$	$\frac{8}{n}=\frac{12}{18}$
6.	$\frac{6}{14}=\frac{15}{n}$	$\frac{n}{6}=\frac{20}{8}$	$\frac{8}{25}=\frac{n}{100}$
7.	$\frac{5}{n}=\frac{20}{24}$	$\frac{3}{8}=\frac{9}{n}$	$\frac{3}{5}=\frac{n}{100}$

Check your answers. Record your score. Perfect score: 21 My score: _____

Problems

Use a proportion to solve each problem.

1. At a certain store 4 tomatoes can be purchased for 29¢. At that rate what would be the cost of 8 of the tomatoes?

Eight tomatoes would cost _____¢.

1.

2. Rico sold 38 papers in 2 hours. At that rate how many papers would he sell in 3 hours?

He would sell _____ papers in 3 hours.

2.

3. On a certain map 2 inches represent 250 miles. What distance would 3 inches represent on this map?

Three inches would represent _____ miles.

3.

4. Six tons of ore can be processed in 3 hours. At that rate how many tons of ore can be processed in 8 hours?

_____ tons of ore can be processed.

4.

5. An automobile used 8 gallons of gasoline in traveling 120 miles. At that rate, how many gallons will be used in traveling 360 miles?

_____ gallons of gasoline will be used.

5.

6. Nine items can be produced in 15 minutes. How many items can be produced in 35 minutes?

_____ items can be produced in 35 minutes.

6.

7. A baseball player has hit 9 home runs in 54 games. At that rate how many home runs will he hit during a 162-game season?

He will hit _____ home runs.

7.

8. A 9-inch piece of rubber can be stretched to a length of 15 inches. At that rate, to what length can a 12-inch piece of rubber be stretched?

It can be stretched to a length of _____ inches.

8.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

TEST—Ratio and Proportion

Express each of the following as a ratio in three ways as shown.

	a	*b*	*c*
1. 28 people for 3 elevators	28 to 3	28:3	$\frac{28}{3}$
2. 5 women to 2 men	_____	_____	_____
3. 17 gallons in 200 miles	_____	_____	_____
4. 4 books for 7 students	_____	_____	_____

Solve each of the following.

	a	*b*	*c*
5.	$\frac{5}{8}=\frac{20}{n}$	$\frac{1}{3}=\frac{n}{42}$	$\frac{n}{5}=\frac{8}{10}$
6.	$\frac{5}{n}=\frac{20}{48}$	$\frac{1}{2}=\frac{16}{n}$	$\frac{3}{4}=\frac{n}{1000}$
7.	$\frac{n}{50}=\frac{54}{100}$	$\frac{7}{n}=\frac{35}{100}$	$\frac{18}{25}=\frac{n}{100}$

Use a proportion to solve each problem.

8. A long-distance runner ran 2 miles in 10 minutes. At that rate how long will it take him to run 6 miles?

It will take _____ minutes.

8.

9. Mr. Suski's car used 5 gallons of gasoline in traveling 75 miles. At that rate how many gallons will be used in traveling 225 miles?

_____ gallons will be used.

9.

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Decimals, Fractions, and Per cent

Complete the following.

	a	*b*
1.	$\frac{7}{10}$ = _____ %	$\frac{2}{3}$ = _____ %
2.	.9 = _____ %	.14 = _____ %
3.	1.3 = _____ %	2.43 = _____ %
4.	.725 = _____ %	1.672 = _____ %

Change each of the following to a decimal.

5.	7% = _____	69% = _____
6.	12.5% = _____	3.25% = _____
7.	18.76% = _____	7.125% = _____
8.	$7\frac{3}{4}$% = _____	$9\frac{1}{4}$% = _____

Change each of the following to a fraction or mixed numeral in simplest form.

9.	27% = _____	35% = _____
10.	117% = _____	280% = _____
11.	54% = _____	175% = _____
12.	$33\frac{1}{3}$% = _____	$87\frac{1}{2}$% = _____

Check your answers. Record your score. Perfect score: 24 My score: _____

NAME _____

Per cent

A symbol such as 3% (read 3 per cent), 17%, 125%, and so on expresses the ratio of some number to 100.

$5\% = \frac{5}{100}$ or .05	$29\% = \frac{29}{100}$ or .29	$123\% = \frac{123}{100}$ or 1.23
7% = _____ or _____	57% = _____ or _____	159% = _____ or _____

Complete the following.

	per cent	*fraction*	*decimal*
1.	1%		
2.	21%		
3.	129%		
4.	3%		
5.	39%		
6.	143%		
7.	9%		
8.	51%		
9.	169%		
10.	69%		
11.	233%		
12.	83%		
13.	357%		
14.	99%		

Check your answers. Record your score. Perfect score: 28 My score: _____

Fractions and Per cent

Study how a proportion is used to change a fraction to a per cent.

Change $\frac{3}{4}$ to a per cent.

$$\frac{3}{4}=\frac{n}{100}$$
$$3\times 100=4\times n$$
$$\frac{3\times 100}{4}=\frac{4\times n}{4}$$
$$75=n$$

Therefore, $\frac{3}{4}=\frac{75}{100}$ or _____%.

Change $\frac{1}{6}$ to a per cent.

$$\frac{1}{6}=\frac{n}{100}$$
$$1\times 100=6\times n$$
$$\frac{1\times 100}{6}=\frac{6\times n}{6}$$
$$16\tfrac{2}{3}=n$$

Therefore, $\frac{1}{6}=\frac{16\frac{2}{3}}{100}$ or _____%.

Complete the following.

	a	*b*
1.	$\frac{1}{2}$ = _____%	$\frac{1}{4}$ = _____%
2.	$\frac{1}{3}$ = _____%	$\frac{1}{8}$ = _____%
3.	$\frac{1}{5}$ = _____%	$\frac{3}{8}$ = _____%
4.	$\frac{1}{12}$ = _____%	$\frac{7}{20}$ = _____%
5.	$\frac{3}{10}$ = _____%	$\frac{7}{8}$ = _____%
6.	$\frac{5}{8}$ = _____%	$\frac{5}{12}$ = _____%
7.	$\frac{5}{16}$ = _____%	$\frac{7}{10}$ = _____%
8.	$\frac{3}{16}$ = _____%	$\frac{11}{12}$ = _____%

Check your answers. Record your score. Perfect score: 16 My score: _____

NAME _____

Fractions and Per cent

Study how a per cent is changed to a fraction or mixed numeral in simplest form.

$65\% = \frac{65}{100}$

$= \frac{13}{20}$

$125\% = \frac{125}{100}$

$= \frac{5}{4}$ or _____

$16\frac{2}{3}\% = \frac{16\frac{2}{3}}{100}$

$= 16\frac{2}{3} \times \frac{1}{100}$

$= \frac{50}{3} \times \frac{1}{100}$

$= \frac{50}{300}$ or _____

Change each of the following to a fraction or mixed numeral in simplest form.

	a	*b*
1.	$25\% =$ _____	$70\% =$ _____
2.	$95\% =$ _____	$72\% =$ _____
3.	$45\% =$ _____	$160\% =$ _____
4.	$150\% =$ _____	$275\% =$ _____
5.	$180\% =$ _____	$230\% =$ _____
6.	$20\% =$ _____	$56\% =$ _____
7.	$37\frac{1}{2}\% =$ _____	$83\frac{1}{3}\% =$ _____
8.	$116\frac{2}{3}\% =$ _____	$62\frac{1}{2}\% =$ _____
9.	$56\frac{1}{4}\% =$ _____	$158\frac{1}{3}\% =$ _____
10.	$31\frac{1}{4}\% =$ _____	$91\frac{2}{3}\% =$ _____
11.	$33\frac{1}{3}\% =$ _____	$87\frac{1}{2}\% =$ _____

Check your answers. Record your score. Perfect score: 22 My score: _____

Fractions and Per cent

Complete the following.

	a	*b*
1.	$\frac{3}{5}=$ _____ %	$\frac{5}{8}=$ _____ %
2.	$\frac{7}{8}=$ _____ %	$\frac{5}{12}=$ _____ %
3.	$\frac{4}{25}=$ _____ %	$\frac{17}{50}=$ _____ %
4.	$\frac{7}{12}=$ _____ %	$\frac{11}{20}=$ _____ %

Change each of the following to a fraction or mixed numeral in simplest form.

	a	*b*
5.	75% = _____	325% = _____
6.	250% = _____	28% = _____
7.	78% = _____	140% = _____
8.	$16\frac{2}{3}\%=$ _____	$62\frac{1}{2}\%=$ _____
9.	$41\frac{2}{3}\%=$ _____	$66\frac{2}{3}\%=$ _____
10.	$8\frac{1}{3}\%=$ _____	$6\frac{1}{4}\%=$ _____
11.	$12\frac{1}{2}\%=$ _____	$18\frac{3}{4}\%=$ _____
12.	4% = _____	105% = _____

Check your answers. Record your score. Perfect score: 24 My score: _____

NAME _____

Decimals and Per cent

Study how a decimal is changed to a per cent.

$.3 = .30 = \frac{30}{100}$

$= 30\%$

$1.83 = \frac{183}{100}$

$= _____\%$

$.335 = .335 \times 1 = \frac{.335}{1} \times \frac{100}{100} = \frac{33.5}{100}$

$= 33.5\%$

$.1625 = .1625 \times 1 = \frac{.1625}{1} \times \frac{100}{100} = \frac{16.25}{100}$

$= _____\%$

Complete the following.

	a	*b*	*c*
1.	$.7 = _____\%$	$.9 = _____\%$	$.5 = _____\%$
2.	$1.3 = _____\%$	$2.6 = _____\%$	$1.9 = _____\%$
3.	$.03 = _____\%$	$.84 = _____\%$	$.35 = _____\%$
4.	$1.06 = _____\%$	$1.87 = _____\%$	$2.45 = _____\%$
5.	$.015 = _____\%$	$.225 = _____\%$	$.375 = _____\%$
6.	$1.032 = _____\%$	$2.125 = _____\%$	$1.477 = _____\%$
7.	$.0825 = _____\%$	$.1875 = _____\%$	$.6825 = _____\%$
8.	$1.0024 = _____\%$	$1.3215 = _____\%$	$2.0001 = _____\%$
9.	$.1 = _____\%$	$.396 = _____\%$	$.17 = _____\%$
10.	$1.296 = _____\%$	$2.39 = _____\%$	$2.3 = _____\%$

Check your answers. Record your score. Perfect score: 30 My score: _____

Decimals and Per cent

Study how a per cent is changed to a decimal.

$21.5\% = \frac{21.5}{100}$

$= 21.5 \times \frac{1}{100}$

$= 21.5 \times .01$

$= .215$

Shorter way

Remove the % and move the decimal point 2 places to the left.

21.5% → 21.5% → .215

$31.25\% = \frac{31.25}{100}$

$= 31.25 \times \frac{1}{100}$

$= 31.25 \times .01$

$= _____$

Shorter way

31.25% → 31.25% → _____

Change each of the following to a decimal.

	a	*b*	*c*
1.	8.5% = _____	12.3% = _____	35.9% = _____
2.	7.4% = _____	16.6% = _____	29.7% = _____
3.	72.25% = _____	9.75% = _____	8.33% = _____
4.	99.44% = _____	156.25% = _____	218.75% = _____
5.	7.125% = _____	6.625% = _____	9.875% = _____
6.	16.425% = _____	93.753% = _____	48.775% = _____
7.	9.6% = _____	6.25% = _____	8.475% = _____
8.	17.54% = _____	67.125% = _____	19.5% = _____

Check your answers. Record your score. Perfect score: 24 My score: _____

NAME _____

Decimals and Per cent

Change $4\frac{1}{2}\%$ to a decimal.

Since $\frac{1}{2} = .5$,

$4\frac{1}{2}\% =$ 4.5 %.

04.5% → .045

$4\frac{1}{2}\% =$ .045

Change $6\frac{3}{4}\%$ to a decimal.

Since $\frac{3}{4} = .75$,

$6\frac{3}{4}\% =$ _____ %.

06.75% → .0675

$6\frac{3}{4}\% =$ _____

Change each of the following to a decimal.

	a	*b*	*c*
1.	$8\frac{1}{2}\% =$ _____	$7\frac{3}{4}\% =$ _____	$6\frac{2}{5}\% =$ _____
2.	$5\frac{1}{4}\% =$ _____	$12\frac{1}{2}\% =$ _____	$8\frac{1}{10}\% =$ _____
3.	$18\frac{3}{4}\% =$ _____	$6\frac{1}{4}\% =$ _____	$7\frac{4}{5}\% =$ _____
4.	$37\frac{1}{2}\% =$ _____	$9\frac{3}{4}\% =$ _____	$5\frac{1}{5}\% =$ _____
5.	$8\frac{1}{4}\% =$ _____	$87\frac{1}{2}\% =$ _____	$9\frac{3}{5}\% =$ _____
6.	$68\frac{3}{4}\% =$ _____	$7\frac{3}{10}\% =$ _____	$7\frac{1}{2}\% =$ _____
7.	$8\frac{2}{5}\% =$ _____	$16\frac{1}{4}\% =$ _____	$9\frac{7}{10}\% =$ _____
8.	$6\frac{1}{2}\% =$ _____	$93\frac{3}{4}\% =$ _____	$8\frac{1}{5}\% =$ _____
9.	$37\frac{2}{5}\% =$ _____	$3\frac{1}{2}\% =$ _____	$31\frac{1}{4}\% =$ _____
10.	$83\frac{9}{10}\% =$ _____	$42\frac{3}{5}\% =$ _____	$21\frac{3}{4}\% =$ _____
11.	$2\frac{7}{50}\% =$ _____	$12\frac{1}{4}\% =$ _____	$1\frac{2}{5}\% =$ _____

Check your answers. Record your score. Perfect score: 33 My score: _____

Decimals and Per cent

Complete the following.

a

	decimal	*per cent*
1.	.5	
2.	1.7	
3.	2.8	
4.	.09	
5.	.67	
6.	1.15	
7.	.075	
8.	.375	
9.	.007	
10.	1.414	
11.	.0875	
12.	.0095	
13.	1.0655	
14.	.0009	
15.	.3125	

b

per cent	*decimal*
7.4%	
16.8%	
137.5%	
7.49%	
86.67%	
209.86%	
7.125%	
3.75%	
$5\frac{1}{2}\%$	
$7\frac{1}{4}\%$	
$4\frac{3}{4}\%$	
$93\frac{3}{4}\%$	
$62\frac{1}{2}\%$	
$35\frac{2}{5}\%$	
$9\frac{3}{10}\%$	

Check your answers. Record your score. Perfect score: 30 My score: _____

NAME _____

Problems

Solve each problem.

1. What per cent have the prices on children's wear been reduced? **1.**

The prices have been reduced _____%.

2. What fractional part of the regular price are men's shoes selling for during the sale? **2.**

Men's shoes are selling for _____ of the regular price.

3. What fractional part have the prices on women's dresses been reduced? **3.**

Women's dresses have been reduced by _____.

4. A basketball player made 46.7% of the shots he attempted last season. How can this per cent be expressed as a decimal? **4.**

46.7% can be expressed as _____.

5. A certain player has a fielding average of .979. How can this average be expressed as a per cent? **5.**

.979 can be expressed as _____%.

6. Three tenths of the books in the school library are fiction. What per cent of the books are fiction? **6.**

_____% of the books are fiction.

Check your answers. Record your score. Perfect score: 6 My score: _____

Per cent

Complete the following. Express each fraction in simplest form.

	a		*b*	
	per cent	*fraction*	*per cent*	*decimal*
1.	5%		8%	
2.		$\frac{1}{10}$		.09
3.	12%		12%	
4.		$\frac{1}{8}$		.27
5.	$16\frac{2}{3}\%$		7.5%	
6.		$\frac{1}{5}$		.168
7.	25%		125%	
8.		$\frac{1}{3}$		1.35
9.	$37\frac{1}{2}\%$		$6\frac{1}{2}\%$	
10.		$\frac{2}{5}$		.2748
11.	50%		206.5%	
12.		$\frac{3}{5}$		1.375
13.	$62\frac{1}{2}\%$		$8\frac{1}{4}\%$	
14.		$\frac{2}{3}$		.0675
15.	$83\frac{1}{3}\%$		$7\frac{3}{4}\%$	

Check your answers. Record your score. Perfect score: 30 My score: _____

NAME _____

TEST—Decimals, Fractions, and Per cent

Complete the following.

	per cent	*fraction*	*decimal*
1.	9%	_____	_____
2.	47%	_____	_____
3.	79%	_____	_____
4.	153%	_____	_____

Complete the following.

	a	*b*	*c*
5.	$\frac{3}{10} =$ _____%	$\frac{5}{8} =$ _____%	$\frac{4}{5} =$ _____%
6.	1.2 = _____%	.325 = _____%	.3175 = _____%

Change each of the following to a decimal.

7. 62.25% = _____ 126.5% = _____ $8\frac{3}{4}\% =$ _____

Change each of the following to a fraction or mixed numeral in simplest form.

8. 85% = _____ 160% = _____ $16\frac{2}{3}\% =$ _____

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Per cent

Complete the following.

	a	*b*
1.	_____ is 40% of 80.	_____ is 35% of 200.
2.	_____ is 50% of 23.	_____ is 25% of 63.
3.	_____ is $83\frac{1}{3}$% of 120.	_____ is $62\frac{1}{2}$% of 240.
4.	_____ is 7.4% of 800.	_____ is 9.6% of 700.
5.	35 is _____% of 140.	150 is _____% of 240.
6.	55 is _____% of 66.	108 is _____% of 90.
7.	$\frac{1}{8}$ is _____% of $\frac{1}{2}$.	$\frac{1}{6}$ is _____% of $\frac{1}{3}$.
8.	.5 is _____% of 1.6.	.32 is _____% of 1.6.
9.	21 is 30% of _____.	49 is 35% of _____.
10.	42 is 30% of _____.	138 is 46% of _____.
11.	25 is 25% of _____.	$31\frac{1}{4}$ is 50% of _____.
12.	.8 is 160% of _____.	$33\frac{1}{3}$ is 25% of _____.

Check your answers. Record your score. Perfect score: 24 My score: _____

NAME _____

Per cent of a Number

What number is 25% of 40?

n $= 25\% \times 40$

$= \frac{1}{4} \times 40$

$= 10$

_____ is 25% of 40.

What number is 30% of 70?

$n = 30\% \times 70$

$= .30 \times 70$

$=$ _____

_____ is 30% of 70.

Complete the following.

	a	*b*
1.	_____ is 50% of 84.	_____ is 7% of 63.
2.	_____ is 23% of 191.	_____ is 75% of 840.
3.	_____ is $12\frac{1}{2}$% of 640.	_____ is $37\frac{1}{2}$% of 960.
4.	_____ is 6.5% of 980.	_____ is 8.4% of 1800.
5.	_____ is $33\frac{1}{3}$% of 96.	_____ is $16\frac{2}{3}$% of 630.
6.	_____ is 97% of 28.5.	_____ is 100% of 65.7.
7.	_____ is 25% of 30.	_____ is 50% of 62.
8.	_____ is 75% of 64.	_____ is 40% of 36.
9.	_____ is 30% of 90.	_____ is 95% of 360.
10.	_____ is 42% of 67.	_____ is 6% of 420.

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem.

1. Bob's team won 75% of their baseball games. They played 16 games in all. How many games did they win?

They won _____ games.

1.

2. A factory is operating at 80% of capacity. The capacity is 300 cases per hour. How many cases are being produced each hour?

_____ cases are being produced each hour.

2.

3. Of the 630 seats in the cafeteria, $66\frac{2}{3}\%$ are in use. How many seats are being used?

_____ seats are being used.

3.

4. Of the 160 base hits a baseball player made last season, 35% were for extra bases. How many extra-base hits did the player make last season?

He made _____ extra-base hits.

4.

5. Of the 240 trees the park department planted last month, 25% were maples. How many maple trees did they plant last month?

They planted _____ maple trees.

5.

6. A salesman's commission is 3% of his total sales. His total sales last month were $24,000. How much was his commission last month?

His commission was $_____ last month.

6.

7. After testing 7,200 transistors, an inspector found that 1.5% were defective. How many of the transistors were defective?

_____ transistors were defective.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Finding What Per cent One Number Is of Another

3 is what per cent of 25?

$3 = n\% \times 25$

$3 = \frac{n}{100} \times 25$

$\frac{3}{1} = \frac{n \times 25}{100}$

$300 = n \times 25$

$12 = n$

3 is _____% of 25.

$\frac{1}{4}$ is what per cent of $\frac{5}{8}$?

$\frac{1}{4} = n\% \times \frac{5}{8}$

$\frac{1}{4} = \frac{n}{100} \times \frac{5}{8}$

$\frac{1}{4} = \frac{n \times 5}{800}$

$800 = 4 \times n \times 5$

$800 = n \times 20$

_____ $= n$

$\frac{1}{4}$ is _____% of $\frac{5}{8}$.

Complete the following.

	a	*b*
1.	25 is _____% of 125.	75 is _____% of 200.
2.	$\frac{1}{2}$ is _____% of $\frac{5}{8}$.	$\frac{2}{3}$ is _____% of $\frac{5}{6}$.
3.	50 is _____% of 60.	63 is _____% of 70.
4.	$\frac{3}{8}$ is _____% of $\frac{3}{4}$.	$37\frac{1}{2}$ is _____% of 50.
5.	5 is _____% of 4.	350 is _____% of 200.
6.	$\frac{1}{6}$ is _____% of $\frac{1}{3}$.	$62\frac{1}{2}$ is _____% of 50.
7.	$\frac{5}{6}$ is _____% of $\frac{2}{3}$.	$12\frac{1}{2}$ is _____% of 75.
8.	20 is _____% of 60.	30 is _____% of 180.

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Solve each problem.

1. Twenty-four of the 30 students invited to a party were able to attend. What per cent of the students were able to attend? **1.**

_____% were able to attend.

2. During the basketball game, Scottie attempted 15 baskets and made 6. What per cent of the baskets that he attempted did he make? **2.**

He made _____% of the baskets he attempted.

3. The gasoline tank on a lawn mower will hold $\frac{3}{4}$ gallon of gasoline. There is $\frac{1}{2}$ gallon of gasoline in the tank. The tank is what per cent full? **3.**

The tank is _____% full.

4. Thomas answered 33 test questions correctly. There were 40 questions in all. What per cent of the questions did he answer correctly? **4.**

He answered _____% correctly.

5. During a sale the price of a pair of shoes was reduced $8. The shoes regularly sell for $24. The price reduction is what per cent of the regular price? **5.**

The price reduction is _____% of the regular price.

6. The sales tax on a $2.80 purchase is $.14. The sales tax is what per cent of the purchase price? **6.**

The sales tax is _____% of the purchase price.

7. Out of 216 votes for class president, Jack received 135 votes. What per cent of the votes did he receive? **7.**

He received _____% of the votes.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Finding a Number When a Per cent of It Is Known

105 is 35% of what number?

$105 = 35\% \times n$

$105 = \frac{35}{100} \times n$

$\frac{105}{1} = \frac{35 \times n}{100}$

$10500 = 35 \times n$

$\frac{300}{} = n$

105 is 35% of _____.

.6 is 15% of what number?

$.6 = 15\% \times n$

$.6 = \frac{15}{100} \times n$

$\frac{.6}{1} = \frac{15 \times n}{100}$

$60 = 15 \times n$

_____ $= n$

.6 is 15% of _____.

Complete the following.

	a	*b*
1.	15 is 25% of _____.	.08 is 40% of _____.
2.	$\frac{2}{5}$ is 50% of _____.	32 is 16% of _____.
3.	$12\frac{1}{2}$ is 75% of _____.	$18\frac{3}{4}$ is 25% of _____.
4.	7 is 140% of _____.	83 is 100% of _____.
5.	.8 is 25% of _____.	2.45 is 35% of _____.
6.	$\frac{1}{3}$ is 40% of _____.	$\frac{5}{6}$ is 125% of _____.
7.	.125 is 20% of _____.	1.28 is 25% of _____.
8.	360 is 150% of _____.	54 is 90% of _____.
9.	$33\frac{1}{3}$ is $66\frac{2}{3}$% of _____.	80 is 100% of _____.

Check your answers. Record your score. Perfect score: 18 My score: _____

Problems

Solve each problem.

1. In his last basketball game, Max made 6 baskets. This was 40% of the baskets that he attempted. How many baskets did he attempt during the game?

He attempted _____ baskets.

1.

2. The down payment on a motor bike is $75. This is 25% of the selling price. How much does the motor bike sell for?

The motor bike costs $_____.

2.

3. Last season 20% of the base hits made by a ball player were home runs. The player hit 42 home runs. How many base hits did he make in all?

He made _____ base hits in all.

3.

4. At the beginning of each track practice, Steve runs $\frac{1}{2}$ mile. This is 40% of the running that he will do during practice. How far will he run during each practice?

He will run _____ miles during each practice.

4.

5. During a sale the price of a pants suit was reduced $10. The reduction was 40% of the regular price. What was the regular price?

The regular price was $_____.

5.

6. Yesterday only 13 students were absent from school. This was 4% of the enrollment. What is the school's enrollment?

_____ students are enrolled.

6.

7. Mrs. Woods received a $.78 discount for paying a bill early. The discount was 5% of her bill. How much was the bill before discount?

The bill was $_____ before discount.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

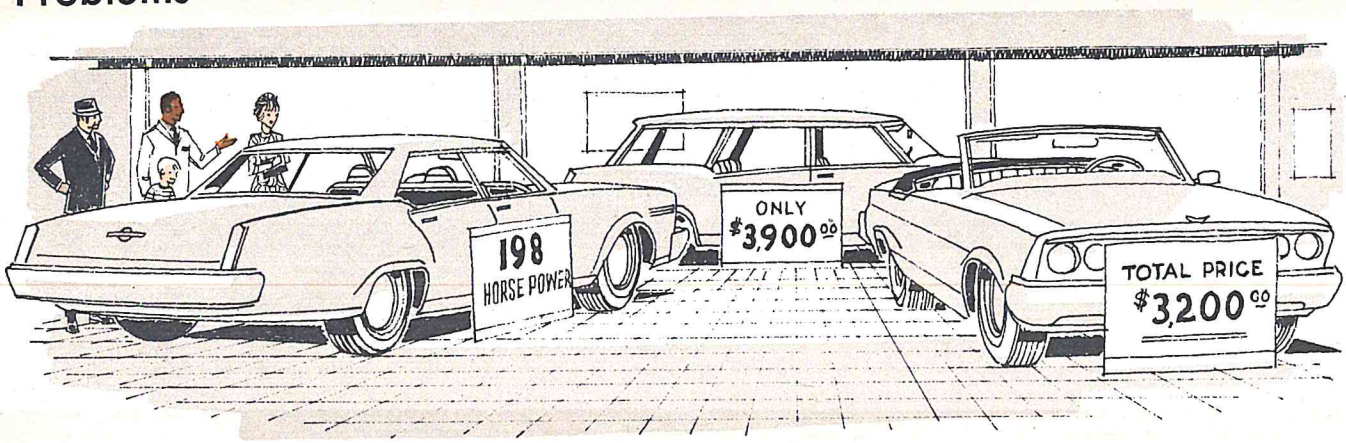
Per cent

Complete the following.

	a	*b*
1.	_____ is 75% of 60.	_____ is 69% of 235.
2.	_____ is $66\frac{2}{3}$% of 96.	_____ is $83\frac{1}{3}$% of 45.
3.	_____ is 7.5% of 600.	_____ is 6.4% of 1600.
4.	_____ is 100% of 935.	_____ is 125% of 180.
5.	8 is _____% of 20.	48 is _____% of 40.
6.	467 is _____% of 467.	550 is _____% of 500.
7.	$\frac{1}{2}$ is _____% of $\frac{3}{4}$.	$\frac{1}{4}$ is _____% of $\frac{5}{6}$.
8.	1.75 is _____% of 3.5.	2.7 is _____% of 3.6.
9.	76 is 19% of _____.	65 is 20% of _____.
10.	360 is 150% of _____.	85 is 125% of _____.
11.	$\frac{3}{4}$ is 60% of _____.	$\frac{3}{8}$ is 50% of _____.
12.	1.8 is 25% of _____.	3.75 is 60% of _____.

Check your answers. Record your score. Perfect score: 24 My score: _____

Problems



Solve each problem.

1. In order to purchase one of the new cars a down payment of 20% is required. What would be the required down payment on the convertible?

The required down payment would be $_____.

1.

2. What would be the required down payment on the station wagon?

The required down payment would be $_____.

2.

3. In trading for the station wagon, Mr. Gallegy was allowed $1300 for his present car. What per cent of the price of the station wagon was he allowed for his car?

He was allowed _____%.

3.

4. The present horsepower of the sedan is 90% of what it would be if special equipment were added. What would the horsepower be if the equipment were added?

The horsepower would be _____.

4.

5. Mr. Lane made a down payment of $720 on the sedan. This was 25% of the total price. What was the total price of the sedan?

The total price was $_____.

5.

Check your answers. Record your score. Perfect score: 5 My score: _____

NAME _____

Per cent

Complete the following.

	a	*b*
1.	_____ is 60% of 300.	_____ is 65% of 780.
2.	_____ is 125% of 64.	_____ is 150% of 160.
3.	_____ is 7% of 560.	_____ is 8% of 96.
4.	_____ is $33\frac{1}{3}$% of 69.	_____ is 8.5% of 7200.
5.	30 is _____% of 120.	12 is _____% of 16.
6.	225 is _____% of 90.	867 is _____% of 867.
7.	126 is _____% of 2100.	36 is _____% of 400.
8.	$16\frac{2}{3}$ is _____% of $83\frac{1}{3}$.	225 is _____% of 675.
9.	56 is 40% of _____.	72 is 120% of _____.
10.	106 is 106% of _____.	975 is 125% of _____.
11.	$\frac{1}{3}$ is 50% of _____.	.875 is 20% of _____.
12.	$\frac{5}{6}$ is 150% of _____.	7.65 is 25% of _____.

Check your answers. Record your score. Perfect score: 24 My score: _____

Problems

Solve each problem.

1. In a certain state the sales tax is 5% of the purchase price. How much tax must be paid on a $60 purchase?

$_____$ tax must be paid.

1.

2. Eighteen out of 24 women interviewed preferred Bubble Soap over other brands. What per cent of the women preferred Bubble Soap?

_____% preferred Bubble Soap.

2.

3. Phyllis answered 21 test questions correctly. This was 84% of the questions on the test. How many questions were on the test?

There were _____ questions on the test.

3.

4. During a sale the prices of men's suits were reduced 40%. At that rate how much would be saved by purchasing a suit that regularly sells for $125?

$_____$ would be saved.

4.

5. Last season a baseball player attempted to steal 36 bases. He was successful on 30 attempts. On what per cent of the attempts was he successful?

He was successful on _____% of the attempts.

5.

6. Warren wants to gain 15 pounds. This is 12% of his present weight. How much does Warren weigh now?

Warren weighs _____ pounds now.

6.

7. A merchant bought some merchandise for $400 and sold it for $480. The cost was what per cent of the selling price?

The cost was _____% of the selling price.

7.

8. There are 27 girls in the school choir. Forty-five per cent of the choir members are girls. How many students are in the choir?

_____ students are in the choir.

8.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Per cent

Complete the following.

	a	*b*
1.	_____ is 30% of 90.	34 is 17% of _____.
2.	42 is _____% of 56.	_____ is 5% of 63.
3.	16 is 40% of _____.	84 is _____% of 70.
4.	_____ is 65% of 35.	675 is 75% of _____.
5.	7 is _____% of 16.	_____ is 25% of 64.
6.	30 is 60% of _____.	57 is _____% of 60.
7.	_____ is 75% of 60.	72 is 80% of _____.
8.	16 is _____% of 80.	_____ is 80% of 40.
9.	74 is 5% of _____.	85 is _____% of 170.
10.	_____ is 68% of 950.	968 is 100% of _____.
11.	52 is _____% of 78.	_____ is 150% of 90.
12.	42 is 30% of _____.	24 is _____% of 64.

Check your answers. Record your score. Perfect score: 24 My score: _____

Problems

Solve each problem.

1. On a typical day, 6% of the students at Wills School are absent. There are 650 students enrolled. How many students would be absent on a typical day?

1.

_____ students would be absent.

2. Some Boy Scouts want to collect 1000 pounds of old papers. After they collect 350 pounds, what per cent of their goal will they have collected?

2.

They will have collected _____% of their goal.

3. During a sale Mrs. Cook purchased a blender for 75% of the regular price. She paid $27 for the blender. What was the regular price of the blender?

3.

The regular price was $_____.

4. There are 48 parking spaces in a parking lot. The lot is $83\frac{1}{3}\%$ filled. How many spaces are filled?

4.

_____ spaces are filled.

5. When 42 out of the total number of parking spaces in problem 4 are filled, what per cent of the spaces are filled?

5.

_____% of the spaces are filled.

6. When the truck is loaded to 45% of capacity, there are 108 cases on the truck. How many cases will be on the truck when it is loaded to capacity?

6.

_____ cases will be on the truck.

7. Jackie had 75 papers to sell. He has sold 45. What per cent of the total number of papers has he sold?

7.

He has sold _____% of the papers.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

TEST—Per cent

Complete the following.

	a	*b*
1.	_____ is 32% of 250.	25 is _____% of 50.
2.	_____ is $16\frac{2}{3}$% of 72.	28 is 40% of _____.
3.	$33\frac{1}{3}$ is $66\frac{2}{3}$% of _____.	1.2 is _____% of 1.6.
4.	$\frac{1}{3}$ is _____% of $\frac{5}{6}$.	_____ is 6.8% of 900.
5.	.8 is 40% of _____.	_____ is 70% of 480.
6.	45 is _____% of 80.	195 is 65% of _____.
7.	_____ is $33\frac{1}{3}$% of 369.	1.9 is _____% of 7.6.
8.	$\frac{1}{3}$ is 40% of _____.	_____ is 150% of 90.
9.	$\frac{3}{4}$ is _____% of $\frac{1}{2}$.	1.4 is 70% of _____.
10.	_____ is 9.2% of 680.	210 is _____% of 240.

Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Interest

Assume each principal has been loaned as indicated. Find the interest for each loan. Then find the total amount needed to repay each loan.

	principal	*rate*	*time*	*interest*	*total amount*
1.	$400	8%	1 year		
2.	$650	6%	1 year		
3.	$120	7%	1 year		
4.	$800	5%	2 years		
5.	$450	9%	3 years		

Complete the following.

	principal	*rate*	*time*	*interest*
6.	$250	6%	$1\frac{1}{2}$ years	
7.	$300	7%	____ years	$47.25
8.	$180		90 days	$ 2.25
9.		8%	60 days	$ .80
10.	$200	6%	180 days	
11.	$180	7%	____ years	$15.75
12.	$300		$\frac{1}{2}$ year	$ 8.25
13.		$8\frac{1}{4}$%	$\frac{1}{3}$ year	$13.75
14.	$1850	$6\frac{1}{2}$%	3 years	
15.	$424	7%	____ year	$22.26

Check your answers. Record your score. Perfect score: 20 My score: _____

NAME _____

Interest

Interest is the money paid for the use of money.

The amount of interest is determined by:

(1) the **principal,** the amount of money borrowed or deposited,

(2) the **rate** of interest, usually given as a per cent, and

(3) the **time,** expressed in years.

When deposited in a savings account, what is the interest on \$300 at 5% for 1 year?

interest = *principal* × *rate* × *time*

$i = 300 \times .05 \times 1$

$= 15.00 \times 1$

$= 15.00$ or 15

The interest is \$_____.

Complete the following.

	principal	*rate*	*time*	*interest*
1.	\$200	5%	1 year	
2.	\$300	4%	1 year	
3.	\$400	5%	1 year	
4.	\$75	6%	1 year	
5.	\$30	7%	1 year	
6.	\$78	4%	1 year	
7.	\$830	4%	1 year	
8.	\$925	6%	1 year	
9.	\$42.80	5%	1 year	
10.	\$513.40	5%	1 year	
11.	\$64.50	8%	1 year	
12.	\$1320.20	5%	1 year	

Check your answers. Record your score. Perfect score: 12 My score: _____

Problems

Solve each problem.

1. Mr. Murray borrowed $450 for 1 year. He is to pay interest at the rate of 6% yearly. How much interest will he pay? 1.

He will pay $_____ interest.

2. Margaret put $65 in a savings account. The account will earn 5% interest yearly. How much interest will the account earn in 1 year? 2.

It will earn $_____ interest.

3. Bob has a $25 bond that pays interest at the rate of 4% a year. How much interest will the bond pay after 1 year? 3.

The bond will pay $_____ interest.

4. The Merkels borrowed $675 for 1 year. The interest rate is 7% a year. How much interest will the Merkels pay? 4.

They will pay $_____ interest.

5. Mrs. Trumpet had $2,400 in her savings account at the beginning of the year. Her account pays 5% interest yearly. How much interest will she receive in 1 year? 5.

She will receive $_____ in 1 year.

6. Assume the interest rate is 8% a year. How much interest would a person have to pay if he borrowed $420.75 for 1 year? 6.

He would have to pay $_____ interest.

7. Al has $450 in an account that pays interest at 4% a year. Marge has $350 in an account that pays interest at 5% a year. Who will receive the greater amount of interest in 1 year? How much greater? 7.

_____ will receive the greater amount.

It will be $_____ greater.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Interest

Mr. Meirs borrowed \$750 for a period of $2\frac{1}{2}$ years. He is to pay interest at the rate of 7% each year.

How much interest will Mr. Meirs pay in the $2\frac{1}{2}$-year period?

$$i = 750 \times .07 \times 2\tfrac{1}{2}$$
$$= 52.50 \times 2\tfrac{1}{2}$$
$$= 131.250 \text{ or } 131.25$$

He will pay \$_____ interest.

What is the total amount Mr. Meirs needs to repay the loan?

principal	\$750
interest	+131.25
total amount	\$881.25

He needs \$_____ to repay the loan.

Find the interest for each of the following.

	principal	*rate*	*time*	*interest*
1.	\$500	7%	2 years	
2.	\$450	8%	$2\frac{1}{2}$ years	
3.	\$392	6%	$1\frac{1}{4}$ years	
4.	\$1875	5%	3 years	
5.	\$1892	7%	$2\frac{3}{4}$ years	

Assume each principal has been loaned as indicated. Find the interest for each loan. Then find the total amount needed to repay each loan.

	principal	*rate*	*time*	*interest*	*total amount*
6.	\$700	5%	$1\frac{1}{2}$ years		
7.	\$85	6%	$\frac{1}{2}$ year		
8.	\$92	4%	$\frac{3}{4}$ year		
9.	\$1875	8%	$3\frac{1}{2}$ years		
10.	\$1490	7%	$2\frac{1}{2}$ years		

Check your answers. Record your score. Perfect score: 15 My score: _____

Problems

Solve each problem.

1. Mr. Rogers borrowed \$800 for a period of 2 years. He is to pay interest at the rate of 7% a year. How much interest will he have to pay? 1.

He will have to pay \$_____ interest.

2. Roger had \$445 in a savings account that paid interest at the rate of 4% a year. How much interest did Roger receive in $1\frac{1}{2}$ years? 2.

Roger received \$_____ interest.

3. Mrs. Lazar deposited \$160 in an account that pays $4\frac{1}{2}$% interest each year. How much interest would she have after $1\frac{1}{2}$ years? 3.

She would have \$_____ interest.

4. Mr. Wrinkles borrowed \$750 for $\frac{1}{2}$ year. How much interest will he be charged if the interest rate is 7% a year? What is the total amount needed to repay the loan? 4.

He will be charged \$_____ interest.

The total amount needed is \$_____.

5. The Mims borrowed \$1500 for $2\frac{1}{2}$ years at 8% yearly interest. What is the total amount needed to repay the loan? 5.

The total amount needed is \$_____.

6. Marvin has \$360 in an account that pays 4% interest a year. Bill has \$290 in an account that pays 5% interest a year. Who will receive the greater amount of interest after $1\frac{1}{2}$ years? How much greater? 6.

_____ will receive the greater amount.

He will receive \$_____ more.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Interest

When computing interest for a certain number of days, a year is usually considered to be 360 days. Thus, 90 days is $\frac{90}{360}$ or $\frac{1}{4}$ year, 180 days is $\frac{180}{360}$ or $\frac{1}{2}$ year, and so on.

How much interest would Mrs. Willis pay for a 30-day loan of \$600 at 8%?

$$i = 600 \times .08 \times \tfrac{30}{360}$$
$$= 48 \times \tfrac{1}{12}$$
$$= 4$$

She would pay \$_____ interest.

How much interest would Mrs. Willis pay for a 120-day loan of \$600 at 8%?

$$i = 600 \times .08 \times \tfrac{120}{360}$$
$$= 48 \times \tfrac{1}{3}$$
$$= 16$$

She would pay \$_____ interest.

Find the interest for each of the following.

	principal	*rate*	*time*	*interest*
1.	\$200	6%	30 days	
2.	\$240	5%	60 days	
3.	\$150	8%	90 days	
4.	\$300	8%	18 days	
5.	\$420	6%	180 days	
6.	\$900	8%	270 days	
7.	\$600	4%	30 days	
8.	\$900	6%	10 days	
9.	\$540	5%	80 days	
10.	\$1900	6%	150 days	

Check your answers. Record your score. Perfect score: 10 My score: _____

Problems

Solve each problem.

1. Interest on a 90-day loan of $400 was charged at the rate of 7% a year. How much interest was charged?

The interest would be $_____.

1.

2. Suppose $350 is invested for 60 days at an annual (yearly) rate of 6%. How much interest will be earned?

$_____ interest would be earned.

2.

3. The Triangle Company borrowed $1900 for 180 days at 8% annual interest. How much interest will they have to pay? What will be the total amount needed to repay the loan?

The interest will be $_____.

The total amount will be $_____.

3.

4. Mr. Davis borrowed $540 for 60 days at 5% annual interest. However, he was able to repay the loan in 30 days. How much interest was he able to save by doing this?

He was able to save $_____ interest.

4.

5. Interest on a 120-day loan of $277.50 is charged at an annual rate of 4%. How much interest is charged?

The interest is $_____.

5.

6. An automobile dealer borrowed $36,000 from the bank at 6% annual interest. How much interest will he be charged for 270 days? If he pays the loan in 270 days, what will be the total amount needed to repay the loan?

He will be charged $_____ interest.

The total amount will be $_____.

6.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Interest

Mary paid \$12 interest on a 1-year loan of \$200. What was the rate of interest?

$$rate = \frac{interest}{principal \times time}$$

$$r = \frac{12}{200 \times 1}$$

$$= \frac{12}{200} \text{ or } \frac{3}{50}$$

$$= .06$$

Mary paid a rate of _____%.

How much money must be invested at 5% interest to earn \$60 in 1 year?

$$principal = \frac{interest}{rate \times time}$$

$$p = \frac{60}{.05 \times 1}$$

$$= \frac{60}{.05}$$

$$= 1200$$

\$_____ must be invested.

Complete the following.

	principal	*rate*	*time*	*interest*
1.	\$500		5 years	\$125
2.	\$450		3 years	\$54
3.		7%	5 years	\$133
4.		6%	$\frac{1}{2}$ year	\$24.75
5.	\$1350	8%	$1\frac{1}{2}$ years	
6.	\$714	5%	$2\frac{1}{2}$ years	
7.		8%	$\frac{1}{4}$ year	\$13
8.	\$920		$1\frac{1}{2}$ years	\$69
9.		6%	$1\frac{2}{3}$ years	\$85
10.	\$1950		$2\frac{3}{4}$ years	\$429

Check your answers. Record your score. Perfect score: 10 My score: _____

Problems

Solve each problem.

1. For a 2-year loan of \$700, Mrs. Teal paid \$84 interest. What was the annual rate of interest charged on the loan?

The annual rate of interest was _____%.

1.

2. A bank charged Mr. Bowman \$19.25 interest on his loan. The loan was for $\frac{1}{2}$ year at an annual interest rate of 7%. How much did Mr. Bowman borrow?

Mr. Bowman borrowed \$_____.

2.

3. Mr. Murray borrowed \$375 for $1\frac{1}{2}$ years. He had to repay a total amount of \$420. How much interest did Mr. Murray have to pay? What was the annual rate of interest?

He had to pay \$_____ interest.

The annual rate of interest was _____%.

3.

4. Suppose interest is paid at an annual rate of 5%. How much would you need to earn \$2,000 a year?

You would need \$_____.

4.

5. The Wiglette Company borrowed money at 7% interest for $1\frac{1}{2}$ years. The company paid \$777 interest. How much did they borrow? What was the total amount needed to repay the loan?

\$_____ was borrowed.

The total amount of repayment was \$_____.

5.

6. John had \$160 in an account for 5 years and received \$32 interest. Bill had \$160 in an account for 4 years and received \$32 interest. What was the rate of interest for John? What was the rate of interest for Bill?

The rate of interest for John was _____%.

The rate of interest for Bill was _____%.

6.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Interest

How long would it take to earn \$63 interest on a principal of \$350 invested at a rate of $4\frac{1}{2}\%$ a year?

It would take _____ years.

$$time = \frac{interest}{principal \times rate}$$

$$t = \frac{63}{350 \times .045}$$

$$= \frac{63}{15.750}$$

$$= 4$$

Complete the following.

	principal	*rate*	*time*	*interest*
1.	\$420	5%	____ years	\$63
2.	\$315	8%	____ years	\$37.80
3.	\$1400	6%	____ year	\$63
4.	\$740	$7\frac{1}{2}\%$	____ years	\$111
5.	\$380	$4\frac{1}{2}\%$	____ years	\$42.75
6.	\$200	$8\frac{1}{4}\%$	____ year	\$8.25
7.		$4\frac{1}{2}\%$	$\frac{2}{3}$ year	\$18
8.	\$1200		$1\frac{1}{3}$ years	\$100
9.	\$900	$5\frac{1}{2}\%$	____ year	\$24.75
10.	\$800	$6\frac{1}{2}\%$	$\frac{3}{4}$ year	
11.	\$500		2 years	\$50.00

Check your answers. Record your score. Perfect score: 11 My score: _____

Problems

Solve each problem.

1. Michael received \$57.60 interest on a savings account balance of \$720. The annual interest rate was 4%. How long did it take for the money in the account to earn \$57.60 interest?

It took _____ years.

1.

2. A savings account pays $5\frac{1}{2}$ % annual interest. How much would you need to deposit for 3 years in order to earn \$74.25 interest?

You would need \$_____.

2.

3. Suppose interest is earned on \$780 at a rate of $8\frac{1}{2}$% annually. How long would it take to earn \$99.45?

It would take _____ years.

3.

4. Mrs. Schultz deposited money at $6\frac{1}{4}$% interest for $\frac{1}{2}$ year. She received \$468.75 interest. How much did she deposit?

She deposited \$_____.

4.

5. The Tumbleys received \$787.50 interest on a savings account of \$4,200. The money was on deposit for $2\frac{1}{2}$ years. What was the annual rate of interest?

The annual rate of interest was _____%.

5.

6. Suppose \$12,500 earns interest at an annual rate of 9%. How long would it take to earn \$750?

It would take _____ year.

6.

7. The Yorkel Company bought a \$20,000 savings certificate. The certificate earns 6% interest yearly. How long will it take to earn \$900?

It will take _____ year.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

TEST—Interest

Assume each principal has been loaned as indicated. Find the interest for each loan. Then find the total amount needed to repay each loan.

	principal	*rate*	*time*	*interest*	*total amount*
1.	$500	4%	1 year		
2.	$400	7%	1 year		
3.	$600	6%	2 years		
4.	$750	8%	3 years		
5.	$525	5%	2 years		

Complete the following.

	principal	*rate*	*time*	*interest*
6.		5%	$1\frac{1}{2}$ years	$22.50
7.	$500		$2\frac{1}{4}$ years	$78.75
8.	$400	8%	____ year	$16
9.	$650	6%	180 days	
10.	$700	$4\frac{1}{2}$%	____ year	$10.50
11.	$800		60 days	$7
12.		$7\frac{1}{2}$%	$\frac{1}{2}$ year	$33.75
13.	$880		2 years	$149.60
14.	$1550	6%	____ years	$232.50
15.	$1600	$5\frac{1}{2}$%	4 years	

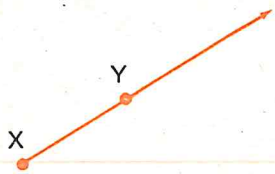
Check your answers. Record your score. Perfect score: 20 My score: _____

PRE-TEST—Geometry

Name each figure below as shown.

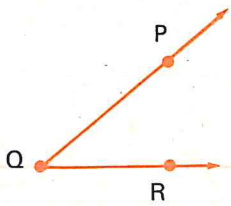
1.

a



$\overrightarrow{XY}$

b



∠PQR

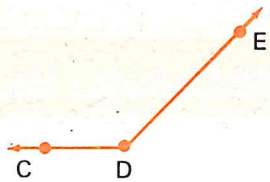
c

$\overline{ST}$

d

$\overleftrightarrow{MN}$

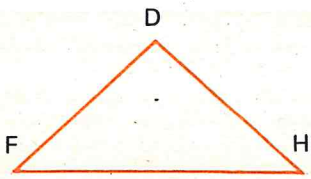
2.



Use a compass to compare the lengths of the sides of each triangle. Then describe each triangle by writing either *scalene*, *isosceles*, or *equilateral* on each ____.

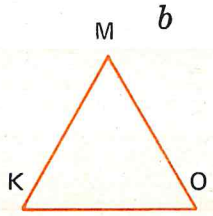
3.

a



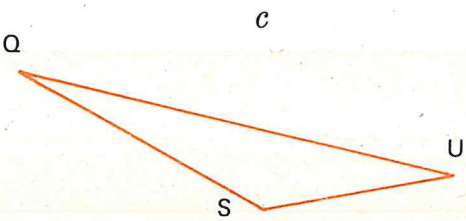
_____ triangle

b



_____ triangle

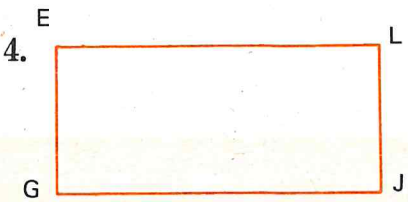
c

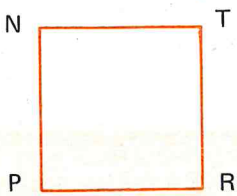


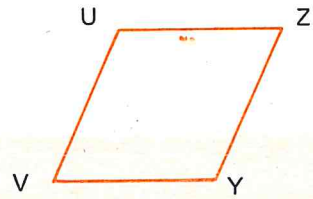
_____ triangle

Write an *R* in each rectangle below. Write an *S* in each square. Write an *X* in each rhombus.

4.



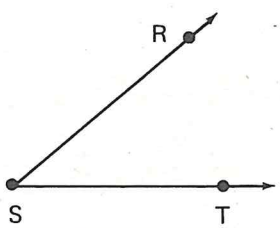




Use a compass and straightedge to make the following constructions.

5. Bisect $\overline{JK}$.

Bisect ∠RST.



Construct a line segment congruent to $\overline{CD}$.

Check your answers. Record your score. Perfect score: 15 My score: _____

NAME _____

Points, Lines, and Line Segments

A **point** can be represented by a dot. Point P is shown above.

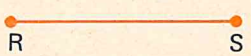
Line AB (denoted $\overleftrightarrow{AB}$) names the line which passes through points A and B. Does $\overleftrightarrow{BA}$ name the same line as $\overleftrightarrow{AB}$? _____

Line segment MN (denoted $\overline{MN}$) consists of points M and N and all points on the line between M and N. Does $\overline{NM}$ name the same segment as $\overline{MN}$? _____

Complete the following as shown.

		a	*b*
1.		line CD or DC	$\overleftrightarrow{CD}$ or $\overleftrightarrow{DC}$
2.		line ___ or ___	___ or ___
3.		line ___ or ___	___ or ___
4.		line ___ or ___	___ or ___

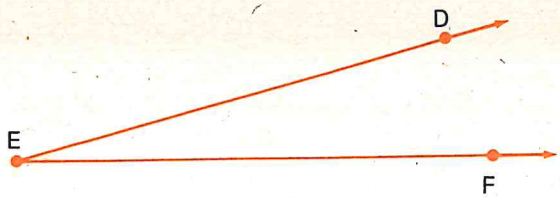
Complete the following as shown.

		a	*b*	*c*
5.		line segment EF or FE	$\overline{EF}$ or $\overline{FE}$	endpoints: E and F
6.		line segment ___ or ___	___ or ___	endpoints: ___ and ___
7.		line segment ___ or ___	___ or ___	endpoints: ___ and ___
8.		line segment ___ or ___	___ or ___	endpoints: ___ and ___

Check your answers. Record your score. Perfect score: 30 My score: _____

Rays and Angles

Ray AB (denoted $\overrightarrow{AB}$) consists of point A and all points on $\overleftrightarrow{AB}$ that are on the same side of A as B. The endpoint of $\overrightarrow{AB}$ is point _____.



An angle is formed by two rays which have a common endpoint. Angle DEF (denoted ∠DEF) is formed by rays $\overrightarrow{ED}$ and $\overrightarrow{EF}$. Does ∠FED name the same angle? _____

Complete the following as shown.

1.

ray MN $\overrightarrow{MN}$ endpoint of ray: M

2.

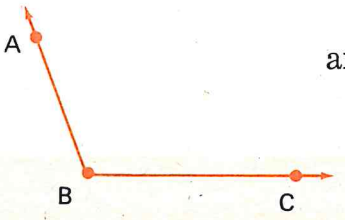
ray _____ _____ endpoint of ray: _____

3.

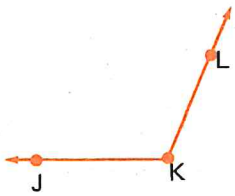
ray _____ _____ endpoint of ray: _____

4.

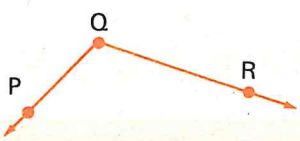
ray _____ _____ endpoint of ray: _____

5. 

angle ABC or CBA ∠ABC or ∠CBA
rays $\overrightarrow{BA}$ and $\overrightarrow{BC}$

6. 

angle _____ or _____ _____ or _____
rays _____ and _____

7. 

angle _____ or _____ _____ or _____
rays _____ and _____

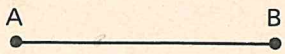
Check your answers. Record your score. Perfect score: 21 My score: _____

NAME _____

Congruent Line Segments

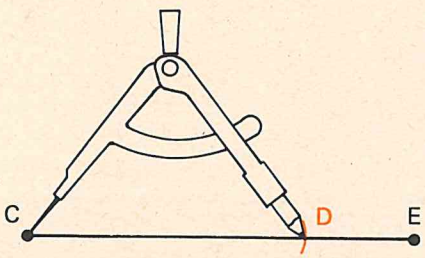
Two line segments which have the same length are called **congruent line segments.**

Study how a compass and straightedge are used to construct $\overline{CD}$ such that $\overline{CD} \cong \overline{AB}$ (read $\overline{CD}$ *is congruent to* $\overline{AB}$).



Start with $\overline{AB}$.

Draw $\overline{CE}$ longer than $\overline{AB}$.



Open the compass to the length of $\overline{AB}$.

Place the compass point at _____.

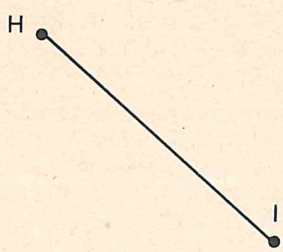
Draw an arc that intersects $\overline{CE}$.

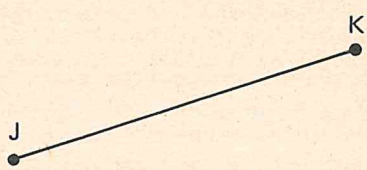
$\overline{CD} \cong$ _____

Use a compass and straightedge to construct a line segment congruent to each of the following.

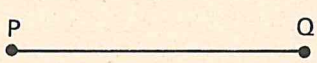
a *b* *c*

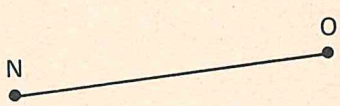
1.



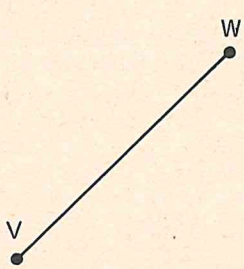


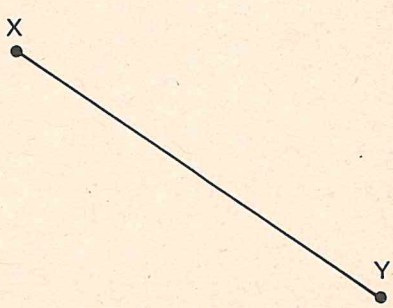
2.





3.





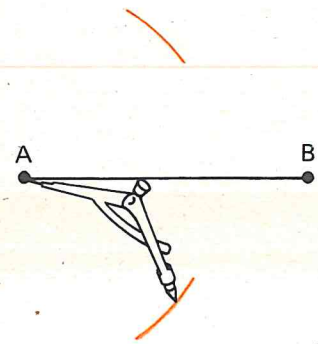
Check your answers. Record your score. Perfect score: 9 My score: _____

Bisecting a Line Segment

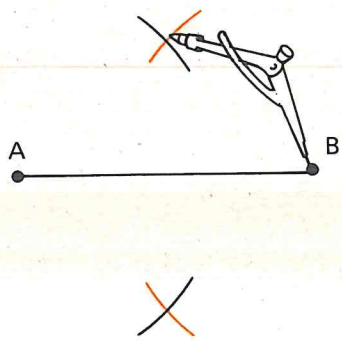
To **bisect** $\overline{AB}$ you must find point C on $\overline{AB}$ so that $\overline{AC} \cong \overline{CB}$.

Study how a compass and straightedge are used to bisect $\overline{AB}$.

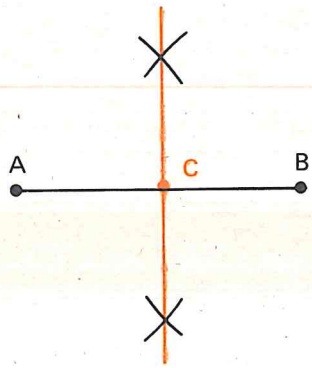
Step 1



Step 2



Step 3

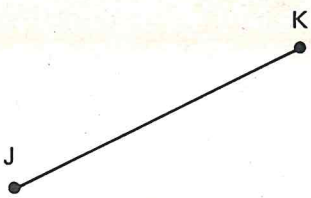


Use a compass to check that $\overline{AC} \cong \overline{CB}$. Is $\overline{AC} \cong \overline{CB}$? _____

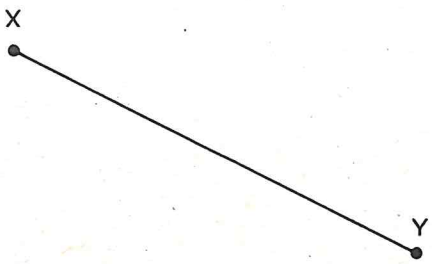
Use a compass and straightedge to bisect each of the following.

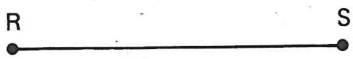
a *b* *c*

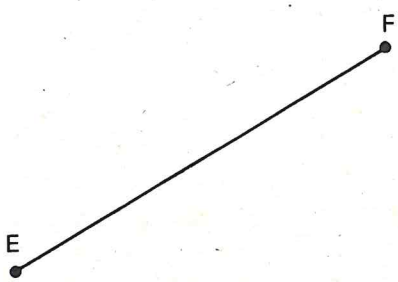
1.



2.







Check your answers. Record your score. Perfect score: 6 My score: _____

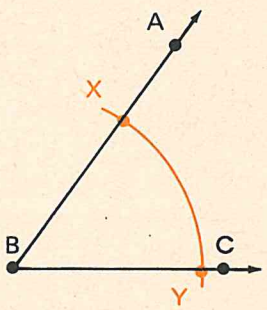
NAME _____

Congruent Angles

Two angles which have the same size are called **congruent angles.**

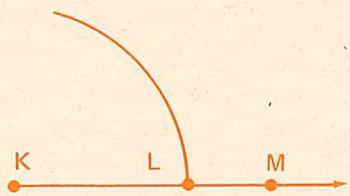
Study how a compass and straightedge are used to construct ∠JKL so ∠JKL ≅ ∠ABC.

Step 1



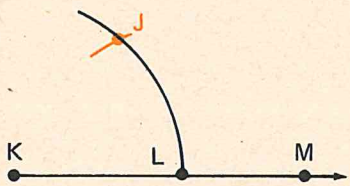
Place the compass point at B. Draw an arc that intersects ∠ABC as shown.

Step 2



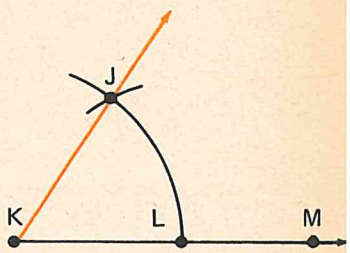
Draw $\overrightarrow{KM}$. Use the same compass opening as in *Step 1*. Place the compass point at K. Draw an arc as shown.

Step 3



Open the compass to the length of $\overline{YX}$. Place the compass point at L. Draw an arc as shown.

Step 4



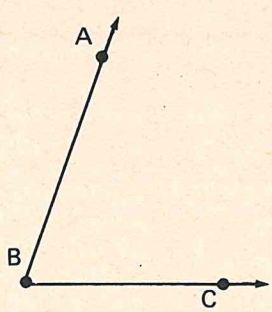
Draw $\overrightarrow{KJ}$. Is ∠JKL the same size as ∠ABC? _____

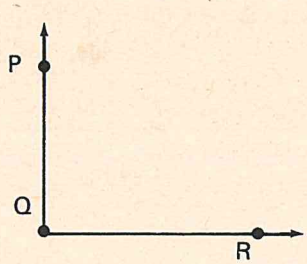
∠JKL ≅ _____.

Use a compass and straightedge to construct an angle congruent to each of the following.

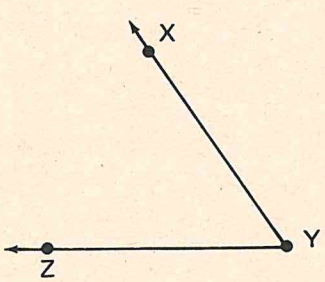
a *b*

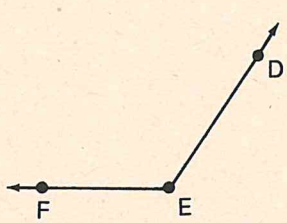
1.





2.



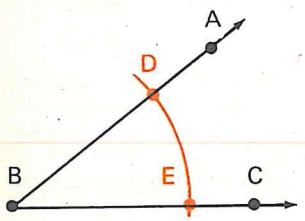


Check your answers. Record your score. Perfect score: 4 My score: _____

Bisecting an Angle

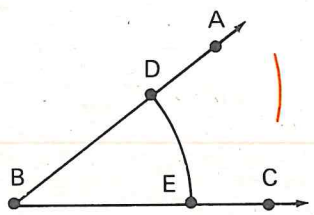
Study how a compass and straightedge are used to bisect ∠ABC.

Step 1



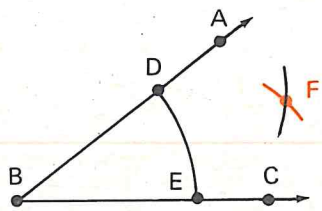
To draw this arc, the compass point is placed at B.

Step 2



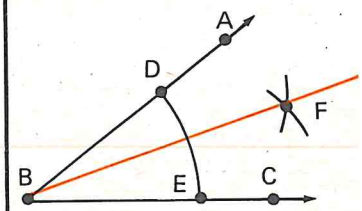
Use a compass opening greater than $\frac{1}{2}$ the length of $\overline{DE}$. Place the compass point at D. Draw an arc as shown.

Step 3



Use the same compass opening as in *Step 2*. Place the compass point at E. Draw an arc to intersect the last arc drawn.

Step 4



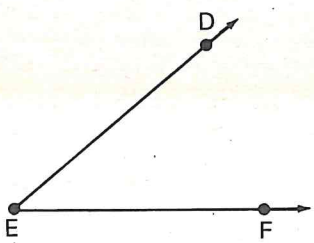
Draw $\overrightarrow{BF}$.

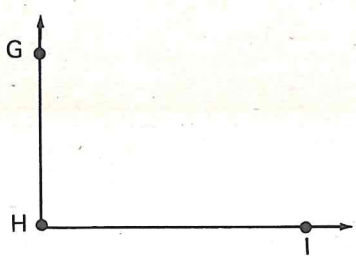
∠ABF ≅ _____

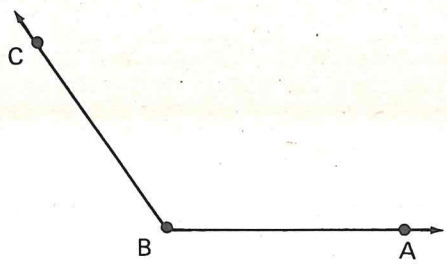
Use a compass and straightedge to bisect each of the following.

a *b* *c*

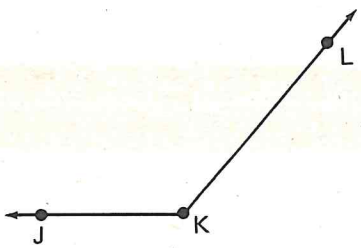
1.

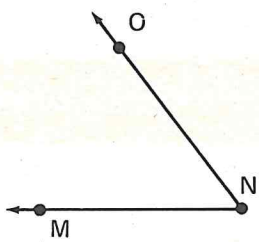


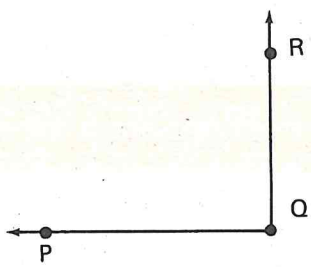




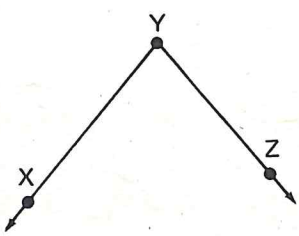
2.

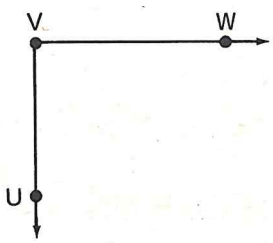


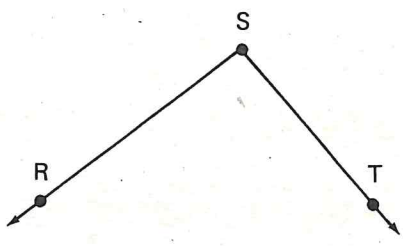




3.



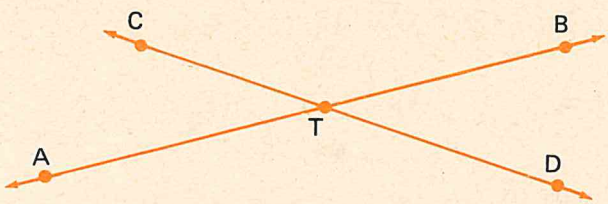




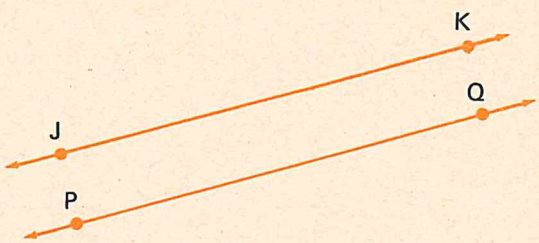
Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Parallel and Intersecting Lines

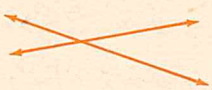
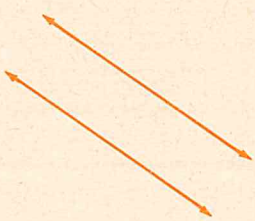


Lines like $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are called **intersecting lines.** What point do $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ have in common? ____



Lines like $\overleftrightarrow{JK}$ and $\overleftrightarrow{PQ}$ are called **parallel lines.** Will $\overleftrightarrow{JK}$ and $\overleftrightarrow{PQ}$ ever intersect, no matter how far extended? _____

Complete the following as shown.

		a *type of lines*		*b* *type of lines*
1.		parallel		intersecting
2.		_____		_____
3.		_____		_____

Answer the following.

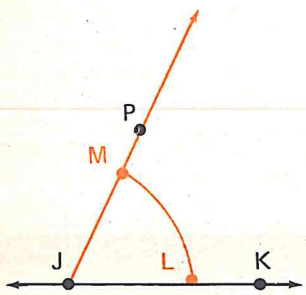
4. In how many points do two parallel lines intersect? _____
5. Can two lines be parallel and also intersect? _____
6. In how many points can two lines intersect? _____
7. If $\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{CD}$, is $\overleftrightarrow{CD}$ parallel to $\overleftrightarrow{AB}$? _____

Check your answers. Record your score. Perfect score: 8 My score: _____

Parallel Lines

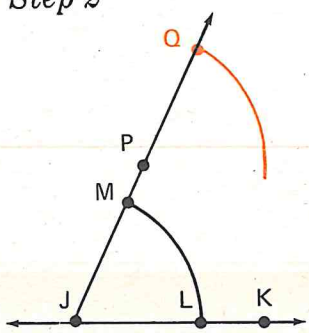
Study how a compass and straightedge are used to construct a line through point P and also parallel to $\overleftrightarrow{JK}$.

Step 1



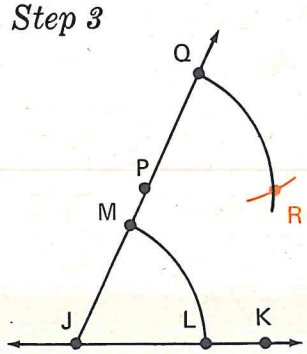
Draw $\overrightarrow{JP}$. Place the compass point at J. Draw an arc as shown.

Step 2



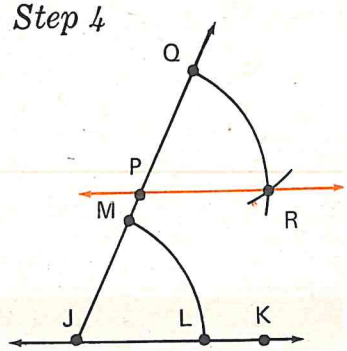
Use the same compass opening as in *Step 1*. Place the compass point at P. Draw an arc as shown.

Step 3



Open the compass to the length of $\overline{ML}$. Place the compass point at Q. Draw an arc as shown.

Step 4

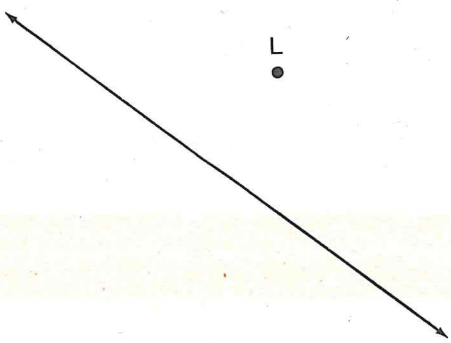


Draw $\overleftrightarrow{PR}$.
Will $\overleftrightarrow{PR}$ intersect $\overleftrightarrow{JK}$? _____
$\overleftrightarrow{PR}$ is parallel to _____.

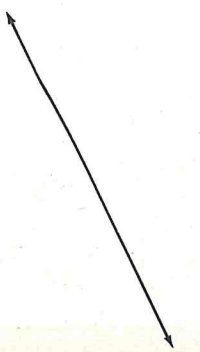
Use a compass and straightedge to do the following. Through each point given, construct a line parallel to the line given.

a

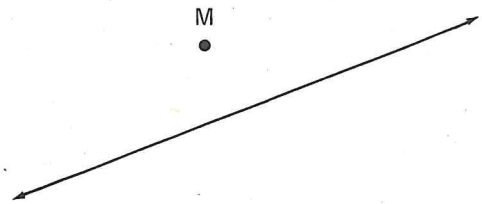
1

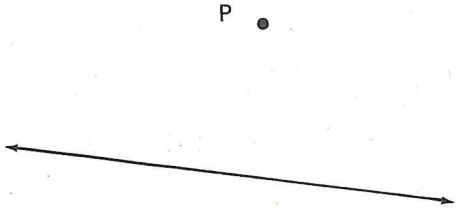


2.



b

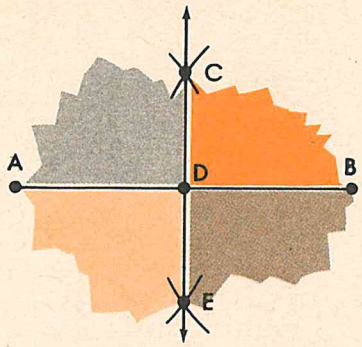




Check your answers. Record your score. Perfect score: 4 My score: _____

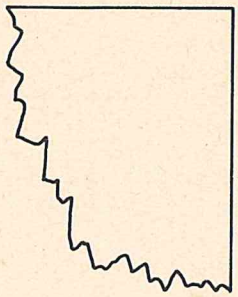
NAME _____

Right Angles

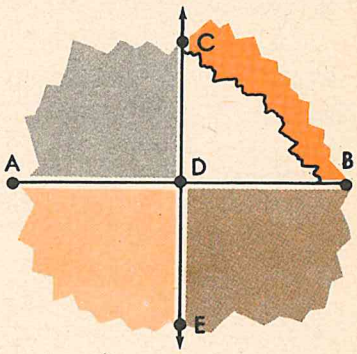


$\overline{AB}$ has been bisected as shown. The interiors of which 4 angles are colored?

_____



Tear a corner from a preceding page of this book as shown above.



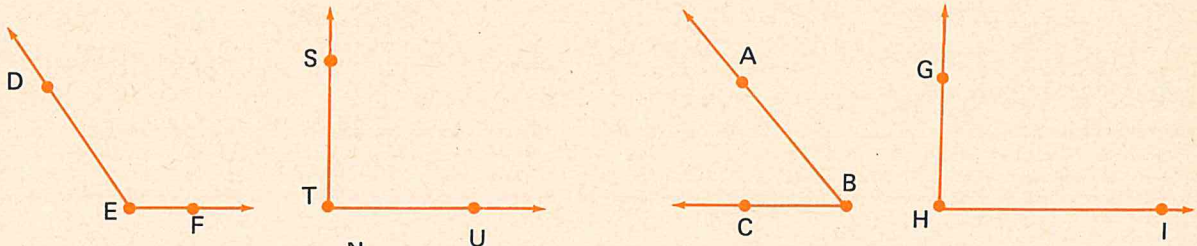
Place the corner on each of the angles as shown above. Does it appear that $\angle CDB \cong \angle CDA \cong \angle EDA \cong \angle EDB$? _____

Angles such as $\angle CDB$, $\angle CDA$, $\angle EDA$, and $\angle EDB$ are called **right angles.** Two lines which form right angles are called **perpendicular lines.**

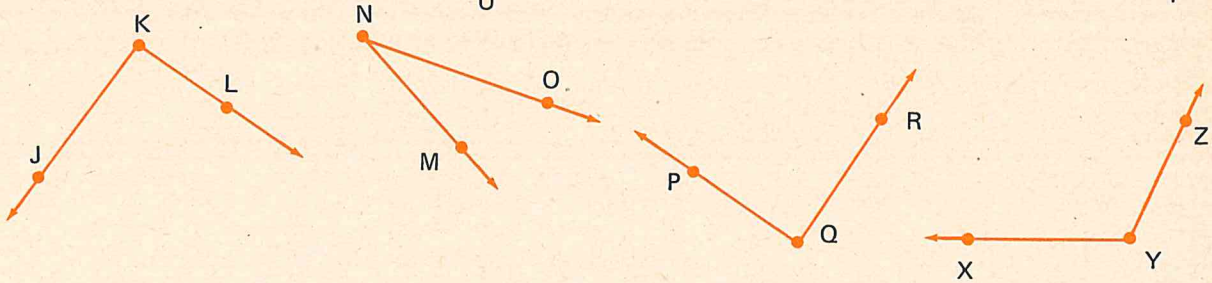
Compare each angle with a model of a right angle. Then write an *R* beside each right angle.

a *b* *c* *d*

1.



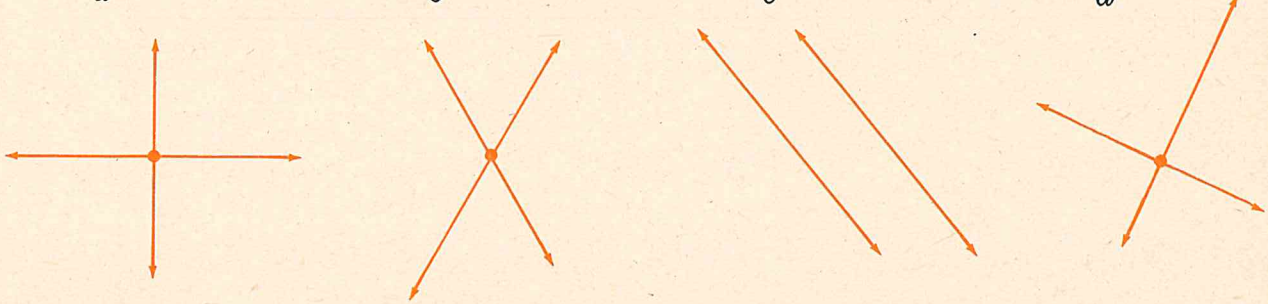
2.



Use a model of a right angle to determine which of the lines below are perpendicular. Then write *P* beside each pair of perpendicular lines.

a *b* *c* *d*

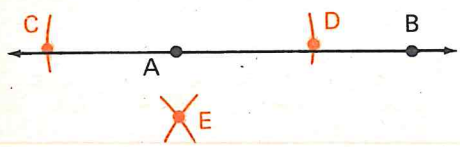
3.



Check your answers. Record your score. Perfect score: 12 My score: _____

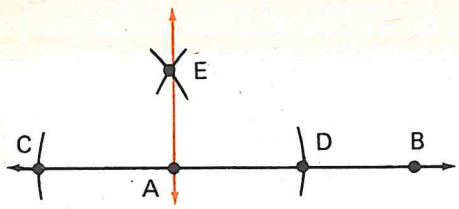
Perpendicular Lines

Study how a compass and straightedge are used to construct a line perpendicular to $\overleftrightarrow{AB}$ at point A.



Use any convenient compass opening. Place the compass point at A. Draw arcs that intersect $\overleftrightarrow{AB}$ as shown.

Open the compass to a length greater than the length of $\overline{CA}$. Place the compass point at C and draw an arc. Use the same compass opening. Place the compass point at D. Draw an arc to intersect the last arc drawn.



Draw $\overleftrightarrow{AE}$. Are ∠CAE and ∠EAD right angles? _____

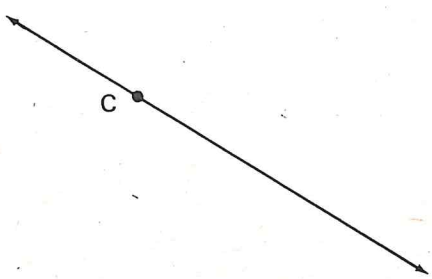
$\overleftrightarrow{AE}$ is perpendicular to _____ at point _____.

Use a compass and straightedge to construct a line perpendicular to each of the following lines at the point given.

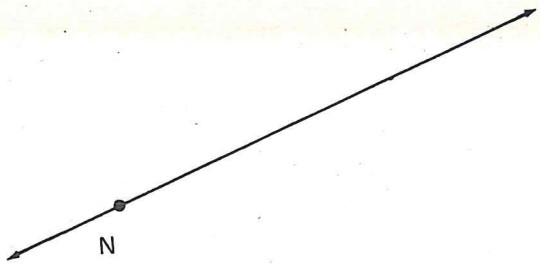
a

1.

2.



b

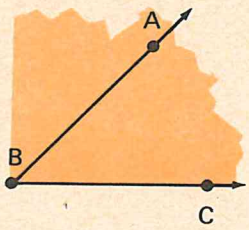


Check your answers. Record your score. Perfect score: 4 My score: _____

NAME _____

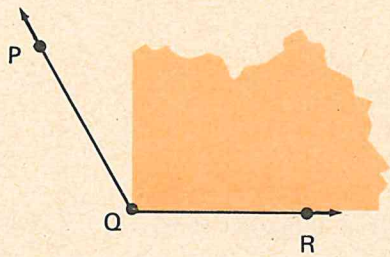
Types of Angles

Compare $\angle ABC$ with a model of a right angle.



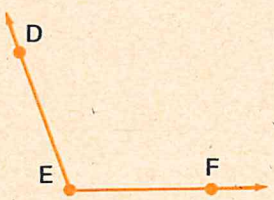
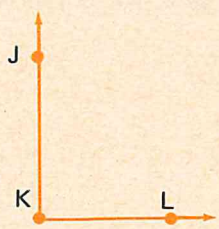
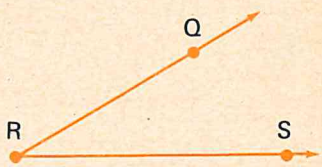
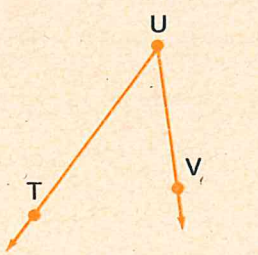
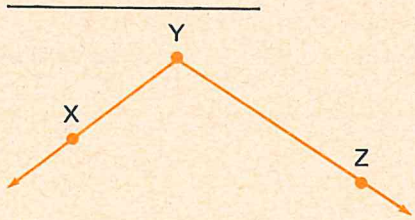
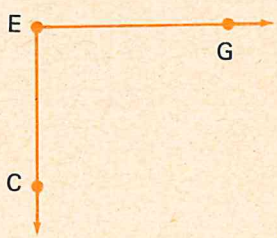
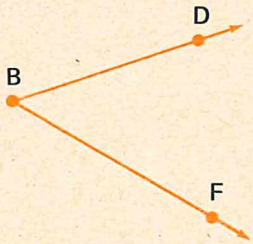
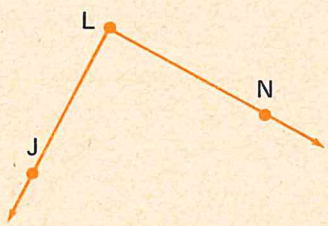
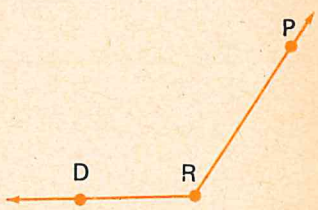
Does $\angle ABC$ appear to be larger or smaller than a right angle? _____ Angles like $\angle ABC$ are called **acute angles.**

Compare $\angle PQR$ with a model of a right angle.



Does $\angle PQR$ appear to be larger or smaller than a right angle? _____ Angles like $\angle PQR$ are called **obtuse angles.**

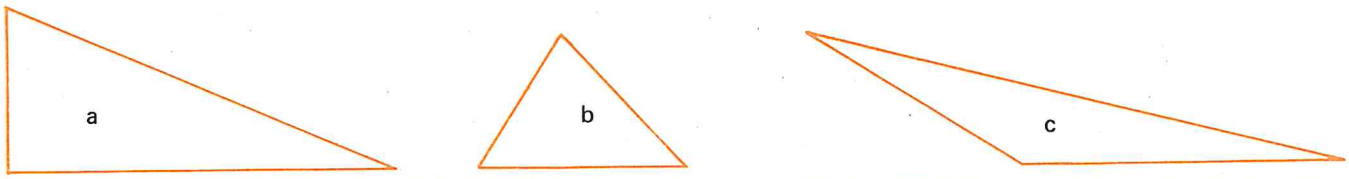
Compare each angle with a model of a right angle. Then describe each angle by writing either *acute*, *obtuse*, or *right* on each ____.

	a	*b*	*c*
1.	 _____	 _____	 _____
2.	 _____	 _____	 _____
3.	 _____	 _____	 _____

Check your answers. Record your score. Perfect score: 9 My score: _____

Types of Triangles by Angles

Compare the angles of each triangle with a model of a right angle.



An acute triangle contains all acute angles.

Which triangle above is an acute triangle? _____

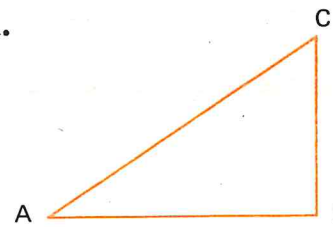
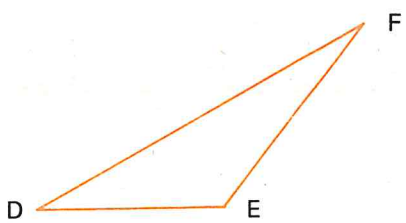
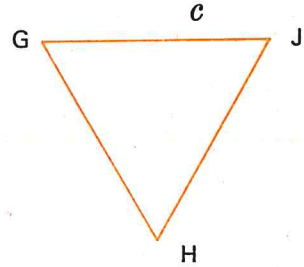
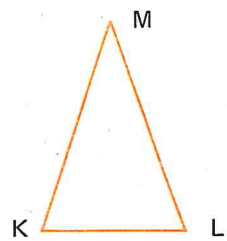
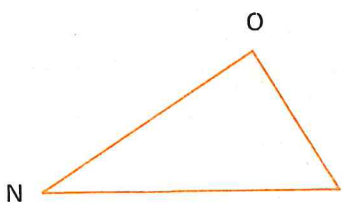
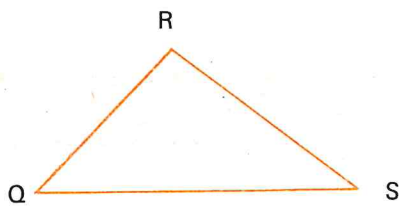
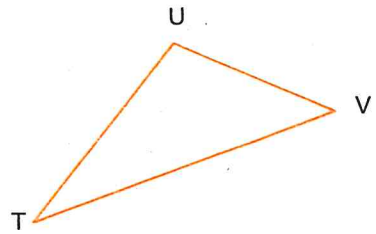
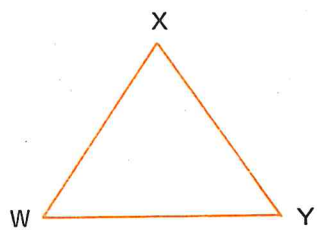
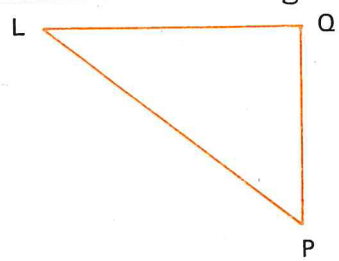
A right triangle contains one right angle.

Which triangle above is a right triangle? _____

An obtuse triangle contains one obtuse angle.

Which triangle above is an obtuse triangle? _____

Compare the angles of each triangle with a model of a right angle. Then describe each triangle by writing either *acute*, *obtuse*, or *right* on each ____.

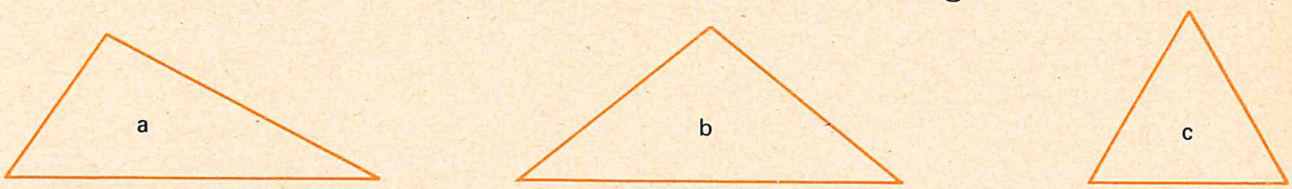
	a	*b*	*c*
1.			
	_____ triangle	_____ triangle	_____ triangle
2.			
	_____ triangle	_____ triangle	_____ triangle
3.			
	_____ triangle	_____ triangle	_____ triangle

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Types of Triangles by Sides

Use a compass to compare the lengths of the sides of each triangle.



In a scalene triangle no two sides are congruent.

Which triangle above is a scalene triangle? _____

In an isosceles triangle at least two sides are congruent.

Which triangles above are isosceles triangles? _____

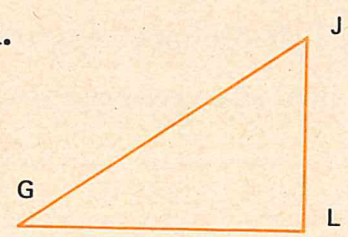
In an equilateral triangle all sides are congruent.

Which triangle above is an equilateral triangle? _____

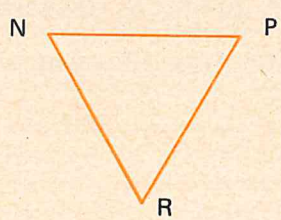
Use a compass to compare the lengths of the sides of each triangle. Then describe each triangle by writing either *scalene*, *isosceles*, or *equilateral* on each ____.

a *b* *c*

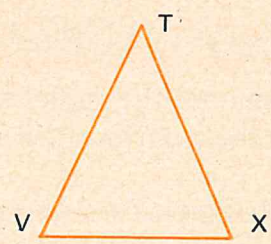
1.



_____ triangle

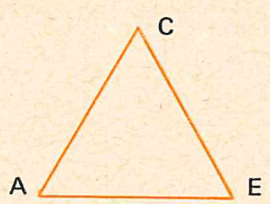


_____ triangle

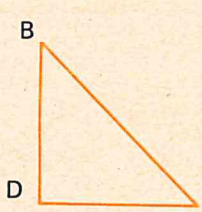


_____ triangle

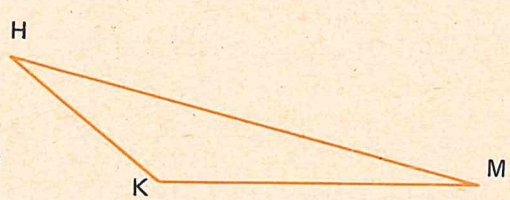
2.



_____ triangle

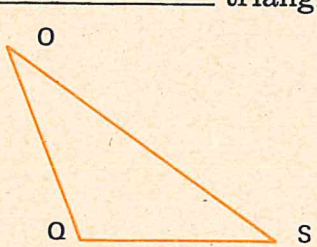


_____ triangle

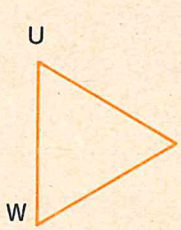


_____ triangle

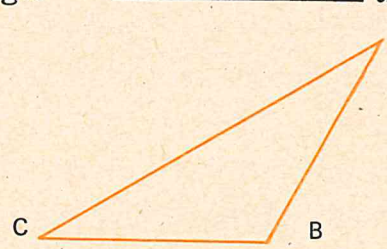
3.



_____ triangle



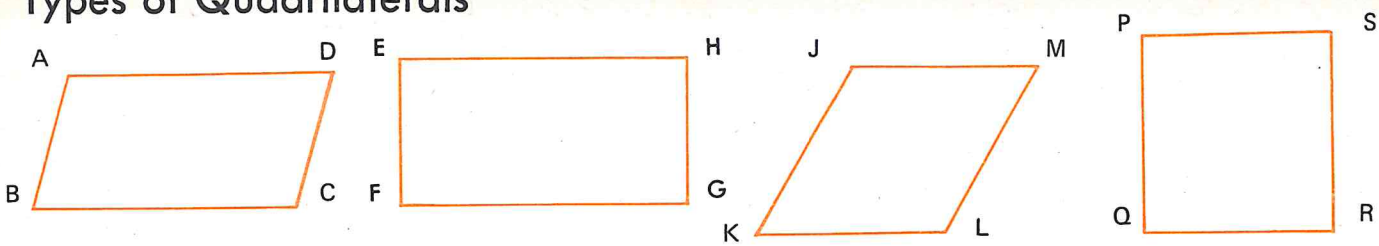
_____ triangle



_____ triangle

Check your answers. Record your score. Perfect score: 9 My score: _____

Types of Quadrilaterals



A **parallelogram** is a quadrilateral (4-sided figure) in which the opposite sides are parallel.

$\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{DC}$ and $\overleftrightarrow{AD}$ is parallel to $\overleftrightarrow{BC}$.

Is figure ABCD a parallelogram? _____

A **rectangle** is a quadrilateral in which all angles are right angles.

Compare each of the angles of figure EFGH with a model of a right angle.

Is figure EFGH a rectangle? _____

A **rhombus** is a quadrilateral in which all sides are congruent.

Use a compass to compare the lengths of the sides of figure JKLM.

Is figure JKLM a rhombus? _____

A **square** is a quadrilateral in which all angles are right angles and all sides are congruent.

Compare the angles of figure PQRS with a model of a right angle and use a compass to compare the lengths of its sides.

Is figure PQRS a square? _____

Use the figures at the top of the page to answer the questions which follow.

	a	*b*
1.	Which figures are rectangles?	Which figure is a square?
	_____	_____
2.	Are all squares rectangles?	Are all rectangles squares?
	_____	_____
3.	Which figures are rhombuses?	Which figure is a square?
	_____	_____
4.	Are all squares rhombuses?	Are all rhombuses squares?
	_____	_____

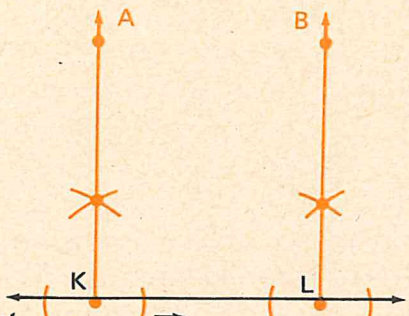
Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Constructing a Square

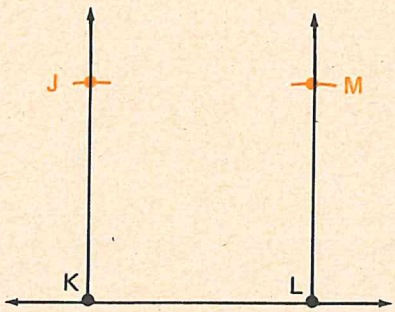
Study how a compass and straightedge are used to construct a square.

Step 1



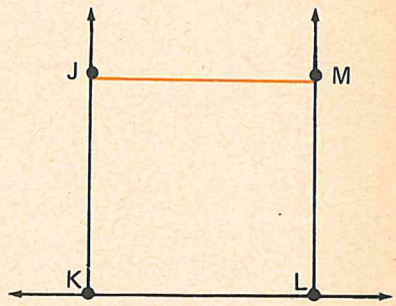
Construct $\overrightarrow{KA}$ perpendicular to $\overleftrightarrow{KL}$ at K. Construct $\overrightarrow{LB}$ perpendicular to $\overleftrightarrow{KL}$ at _____.

Step 2



Construct $\overline{JK}$ so that $\overline{JK} \cong \overline{KL}$. Construct $\overline{ML}$ so that $\overline{ML} \cong \overline{KL}$.

Step 3



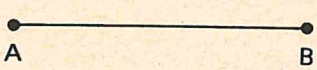
Draw $\overline{JM}$. Is $\overline{JM} \cong \overline{KL}$?_____

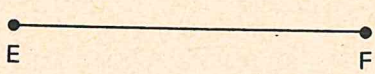
Figure _____ is a square.

Use a compass and straightedge to construct squares having sides congruent to the line segments below.

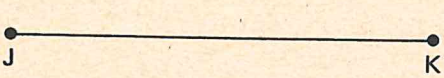
a *b*

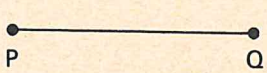
1.





2.





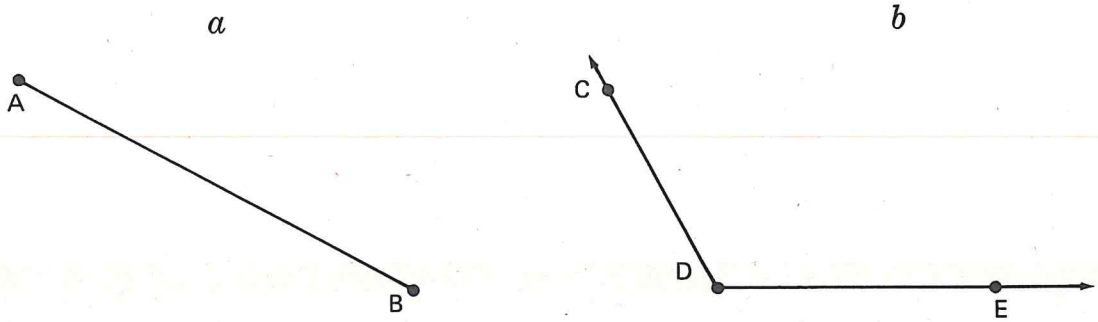
Check your answers. Record your score. Perfect score: 4 My score: _____

Construction

Use a compass and straightedge in each of the following constructions.

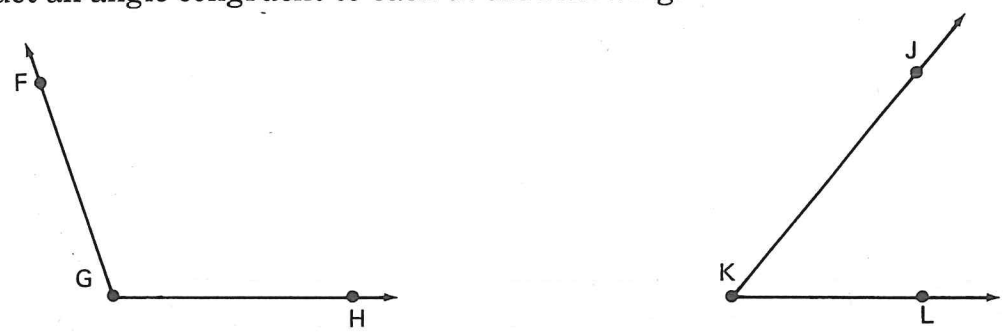
Bisect each line segment or angle below.

1.



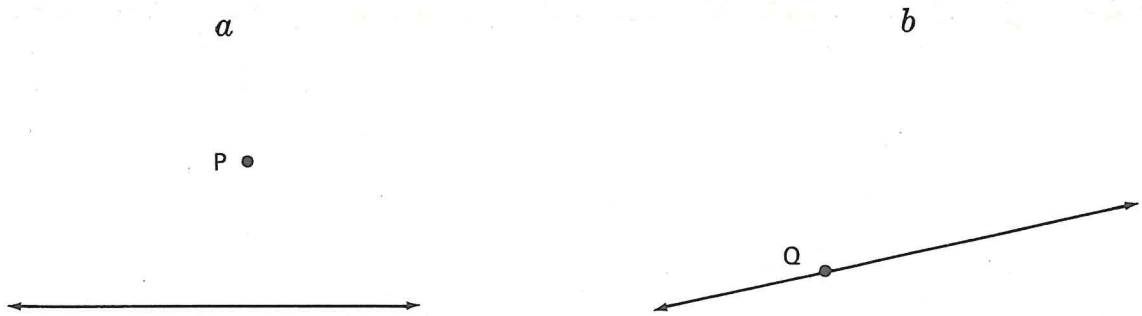
Construct an angle congruent to each of the following.

2.



Construct a line through point P and parallel to the line in *a*. Construct a line perpendicular to the line in *b* at point Q.

3.



Construct a square having sides congruent to the line segments below.

4.

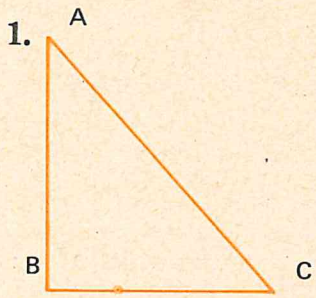
Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

TEST—Geometry

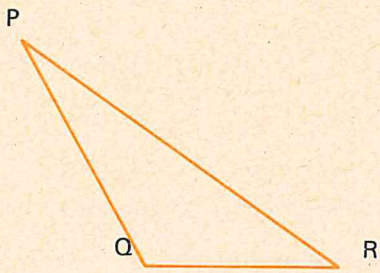
Compare the angles of each triangle with a model of a right angle. Then describe each triangle by writing either *acute*, *obtuse*, or *right* on each ____.

a

1. 

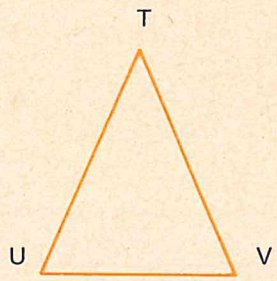
_____ triangle

b



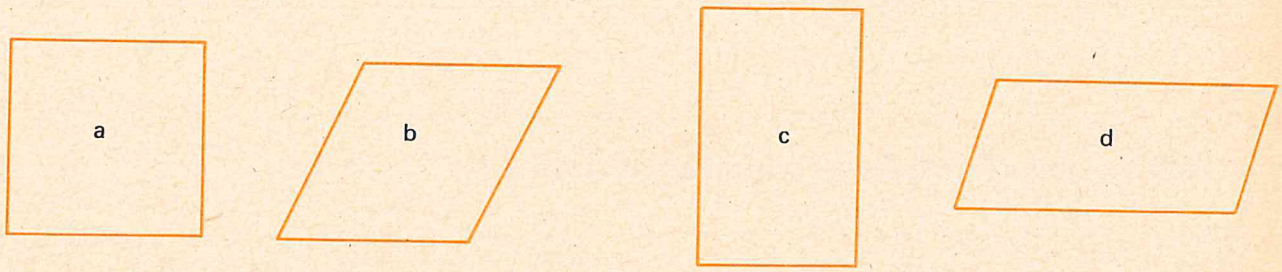
_____ triangle

c



_____ triangle

In each figure below, the opposite sides are parallel. Use these figures to answer the questions that follow.

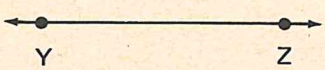


2. Which figures are squares? _____
3. Which figures are rectangles? _____
4. Which figures are parallelograms? _____
5. Which figures are rhombuses? _____
6. Which figures are quadrilaterals? _____

Use a compass and straightedge to make the following constructions.

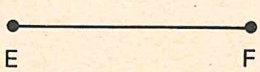
a

7. Construct a line parallel to $\overleftrightarrow{YZ}$.



b

Construct a square having sides congruent to $\overline{EF}$.



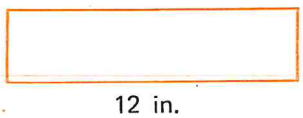
Check your answers. Record your score. Perfect score: 10 My score: _____

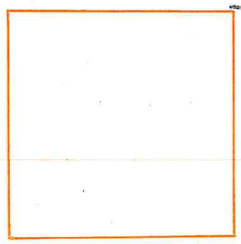
PRE-TEST—Perimeter and Area

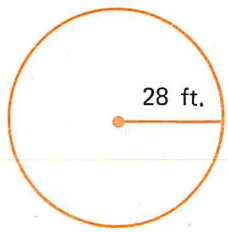
Find the perimeter (or circumference) of each figure below. Use $3\frac{1}{7}$ for π.

a *b* *c*

1.

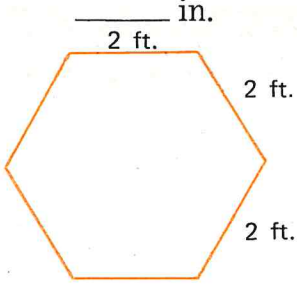


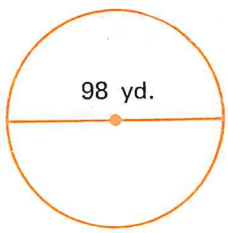


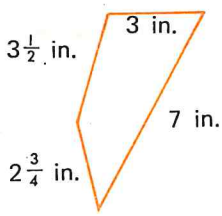


_____ in. _____ yd. _____ ft.

2.



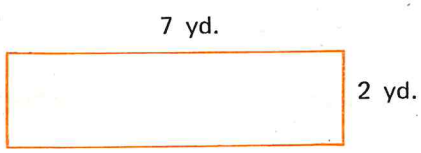


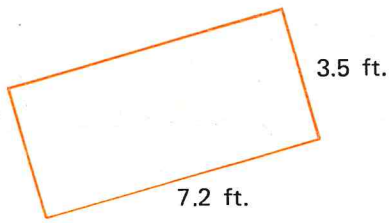


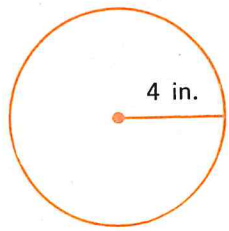
_____ ft. _____ yd. _____ in.

Find the area of each figure below. Use 3.14 for π.

3.

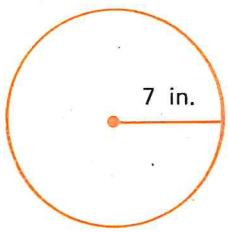


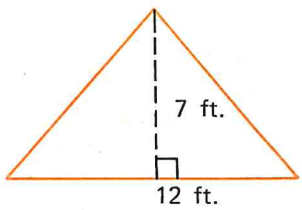


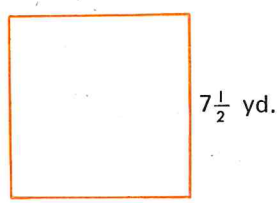


_____ sq. yd. _____ sq. ft. _____ sq. in.

4.

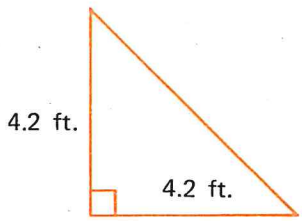


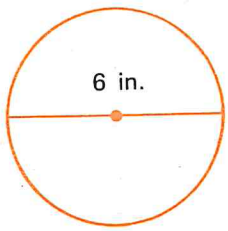


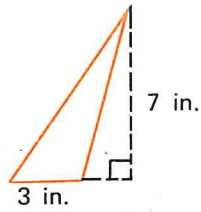


_____ sq. in. _____ sq. ft. _____ sq. yd.

5.







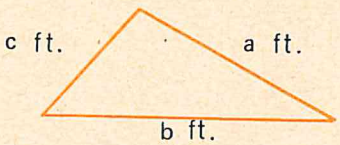
_____ sq. ft. _____ sq. in. _____ sq. in.

Check your answers. Record your score. Perfect score: 15 My score: _____

NAME _____

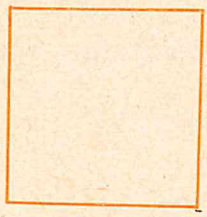
Perimeter

The distance around a figure is called its perimeter.



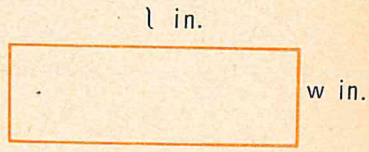
$p = a + b + c$

If $a=4$, $b=5$, and $c=3$, the perimeter of the triangle is _____ ft.



$p = 4 \times s$

If $s=7\frac{1}{2}$, the perimeter of the square is _____ yd.



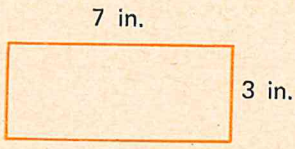
$p = 2 \times (l + w)$

If $l=8$ and $w=3$, the perimeter of the rectangle is _____ in.

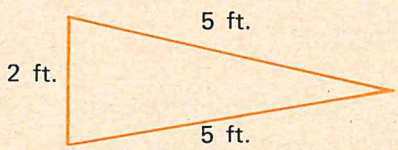
Find the perimeter of each figure.

a *b* *c*

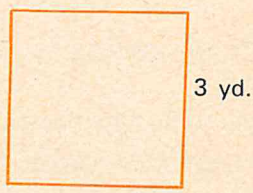
1.



_____ in.

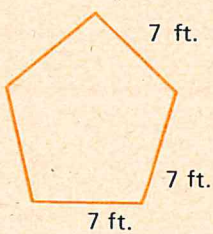


_____ ft.

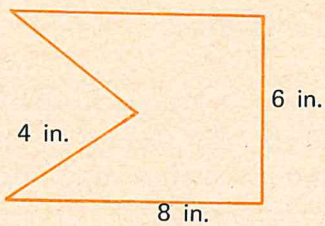


_____ yd.

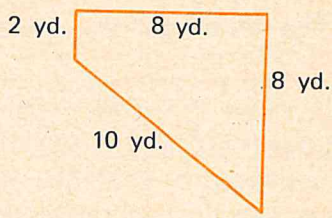
2.



_____ ft.



_____ in.



_____ yd.

Complete the table for each rectangle described below.

	length	*width*	*perimeter*
3.	9 yd.	4 yd.	_____ yd.
4.	$4\frac{1}{2}$ ft.	$3\frac{1}{2}$ ft.	_____ ft.
5.	$7\frac{1}{4}$ in.	$2\frac{1}{2}$ in.	_____ in.
6.	$3\frac{1}{2}$ mi.	2 mi.	_____ mi.
7.	7.5 ft.	6.5 ft.	_____ ft.

Check your answers. Record your score. Perfect score: 11 My score: _____

Problems

Solve each problem.

1. The two longer sides of a lot measure 204 feet and 192 feet. The two shorter sides measure 92 feet and 54 feet. What is the perimeter of the lot?

The perimeter is _____ feet.

1.

2. Mrs. Batka's lot is shaped like a rectangle. It is 175 feet long and 48 feet wide. What is the perimeter of her lot?

The perimeter is _____ feet.

2.

3. A photograph measures $3\frac{1}{2}$ inches on each side. What is its perimeter?

Its perimeter is _____ inches.

3.

4. A flower bed is in the shape of a triangle. The sides measure $2\frac{1}{2}$ yards, $3\frac{1}{2}$ yards, and $4\frac{1}{4}$ yards. What is the perimeter of the flower bed?

The perimeter is _____ yards.

4.

5. John is considering wrapping a string around a rectangular picture frame. He has $2\frac{1}{2}$ feet of string. The frame is 6 inches wide and 10 inches long. How much too long or too short will the string be?

The string _____ long enough.

It is _____ inches too _____.

5.

6. Each edge of a triangular board is 2.3 feet long. Each edge of a square board is 1.6 feet long. Which has the greater perimeter? How much greater?

The _____
has the greater perimeter.

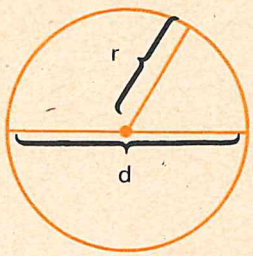
It is _____ foot greater.

6.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Circumference of a Circle



The perimeter of a circle is called its **circumference**.
The length of a *diameter* is twice the length of a *radius*.

$$d = 2 \times r \text{ and } r = d \div 2$$

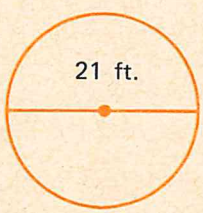
For circles of all sizes, $C \div d$ names the same number. This number is represented by π (spelled *pi* and pronounced *pie*). π is approximately equal to $3\frac{1}{7}$ or 3.14.

To find the circumference of a circle, use $C = \pi \times d$ or $C = 2 \times \pi \times r$.

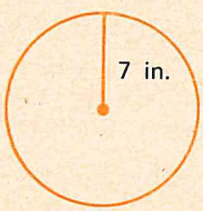
Find the circumference of each circle. Use $3\frac{1}{7}$ for π.

a *b* *c*

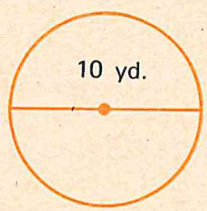
1.



_____ ft.

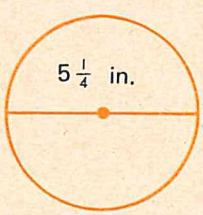


_____ in.

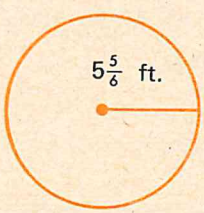


_____ yd.

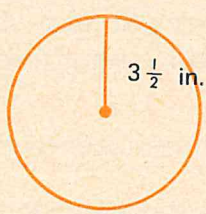
2.



_____ in.



_____ ft.



_____ in.

Complete the table for each circle described below. Use 3.14 for π.

	diameter	*radius*	*circumference*
3.	8 yd.	_____ yd.	_____ yd.
4.	_____ in.	3 in.	_____ in.
5.	7 ft.	_____ ft.	_____ ft.
6.	_____ in.	8.5 in.	_____ in.
7.	9.4 ft.	_____ ft.	_____ ft.
8.	_____ yd.	7.2 yd.	_____ yd.

Check your answers. Record your score. Perfect score: 18 My score: _____

Problems

Solve each problem. Use $3\frac{1}{7}$ for π in problems 1-3. Use 3.14 for π in problems 4-6.

1. The wheel on Mr. Wilson's car has a 7-inch radius. What is the diameter of the wheel? What is the circumference of the wheel?

1.

The diameter is _____ inches.

The circumference is _____ inches.

2. The tire on Miss Wolfson's car has a 28-inch diameter. What is the radius of the tire? What is the circumference of the tire?

2.

The radius is _____ inches.

The circumference is _____ inches.

3. A circular play area has a radius of $16\frac{1}{2}$ yards. What is the circumference of the play area?

3.

The circumference is _____ yards.

4. The diameter of a coin is 1 inch. What is the radius of the coin? What is the circumference of the coin?

4.

The radius is _____ inch.

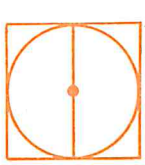
The circumference is _____ inches.

5. The lid of a garbage can has a 2-foot diameter. What is the circumference of the lid?

5.

The circumference is _____ feet.

6. Which has the greater perimeter, the square or the circle? How much greater?



6.

The _____ has the greater perimeter.

It is _____ inches greater.

Check your answers. Record your score. Perfect score: 10 My score: _____

NAME _____

Circumference of a Circle

$C = \pi \times d$ and $d = C \div \pi$

Find d if $C = 66$.

$$d = C \div \pi$$
$$= 66 \div \tfrac{22}{7}$$
$$= 66 \times \tfrac{7}{22}$$
$$= 21$$

The diameter is _____ units.

$C = 2 \times \pi \times r$ and $r = C \div (2 \times \pi)$

Find r if $C = 25.12$.

$$r = C \div (2 \times \pi)$$
$$= 25.12 \div (2 \times 3.14)$$
$$= 25.12 \div 6.28$$
$$= 4$$

The radius is _____ units.

Complete the table for each circle described below. Use $3\frac{1}{7}$ for π in problems **1-6.** Use 3.14 for π in problems **7-12.**

	diameter	*radius*	*circumference*
1.	_____ in.	_____ in.	22 in.
2.	_____ ft.	_____ ft.	110 ft.
3.	_____ in.	_____ in.	88 in.
4.	_____ yd.	_____ yd.	11 yd.
5.	_____ ft.	_____ ft.	2 ft.
6.	_____ yd.	_____ yd.	33 yd.
7.	_____ in.	_____ in.	6.28 in.
8.	_____ ft.	_____ ft.	31.4 ft.
9.	_____ yd.	_____ yd.	9.42 yd.
10.	_____ ft.	_____ ft.	21.98 ft.
11.	_____ in.	_____ in.	3.14 in.
12.	_____ yd.	_____ yd.	12.56 yd.

Check your answers. Record your score. Perfect score: 24 My score: _____

Problems

Solve each problem. Use $3\frac{1}{7}$ for π in problems 1-3. Use 3.14 for π in problems 4-6.

1. The circumference of a wheel is 110 inches. What is the diameter of the wheel? What is the radius?

The diameter is _____ inches.

The radius is _____ inches.

1.

2. What is the radius of a circle if the circumference is 7 feet? What is the diameter?

The radius is _____ feet.

The diameter is _____ feet.

2.

3. The circumference of a coin is $3\frac{1}{7}$ inches. What is the diameter of the coin? What is the radius?

The diameter is _____ inch.

The radius is _____ inch.

3.

4. The circumference of a circular flower bed is 9.42 yards. What is the radius of the flower bed? What is the diameter of the flower bed?

The radius is _____ yards.

The diameter is _____ yards.

4.

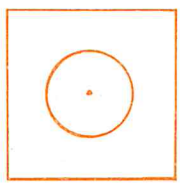
5. If the circumference of a circle is 1.57 feet, what is the diameter? What is the radius?

The diameter is _____ foot.

The radius is _____ foot.

5.

6. The circumference of the circle is 9.72 inches less than the perimeter of the square. What is the diameter of the circle? The radius?



The diameter is _____ inches.

The radius is _____ inch.

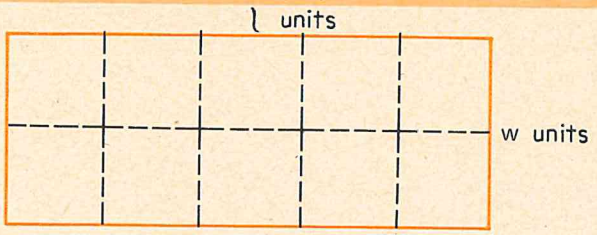
6.

Check your answers. Record your score. Perfect score: 12 My score: _____

NAME _____

Area of Rectangles

To find the **area measure** (A) of a rectangle, multiply the measure of the *length* (l) by the measure of the *width* (w).



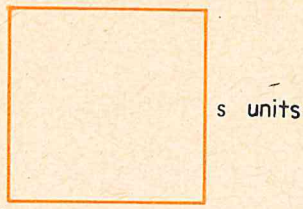
Find A if $l=5$ and $w=2$.

$A=l\times w$

$=5\times$ _____

$=$ _____

The area is _____ square (sq.) units.



Find A if $s=7$.

$A=s\times s$

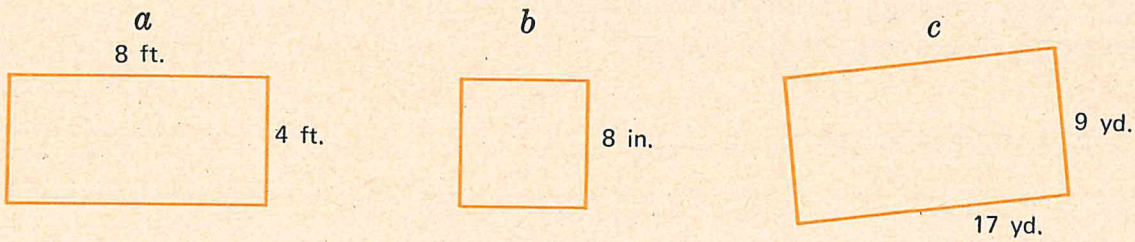
$=$ _____ $\times$ _____

$=$ _____

The area is _____ sq. units.

Find the area of each rectangle below.

1.



_____ sq. ft. _____ sq. in. _____ sq. yd.

Complete the table for each rectangle described below.

	length	*width*	*area*
2.	18 in.	3 in.	_____ sq. in.
3.	7.5 ft.	7.5 ft.	_____ sq. ft.
4.	$4\frac{1}{2}$ in.	$3\frac{1}{2}$ in.	_____ sq. in.
5.	$2\frac{1}{4}$ yd.	$2\frac{1}{4}$ yd.	_____ sq. yd.
6.	6.5 ft.	2.5 ft.	_____ sq. ft.
7.	8.3 in.	4.1 in.	_____ sq. in.

Check your answers. Record your score. Perfect score: 9 My score: _____

Problems

Solve each problem.

1. A rectangular sheet of paper measures $8\frac{1}{2}$ inches by 11 inches. What is the area of the sheet of paper? 1.

The area is _____ square inches.

2. A square-shaped picture measures $5\frac{1}{2}$ inches along each edge. What is the area of the picture? 2.

The area is _____ square inches.

3. Mr. Hudson's rectangular lot is 55 feet wide and 92 feet deep. What is the area of his lot? 3.

The area is _____ square feet.

4. Mr. Hatfield asked the pupils to draw a rectangle that has an area of 15 square inches. Mark drew a 3-inch by 5-inch rectangle. Millie drew a $2\frac{1}{2}$-inch by 6-inch rectangle. Were both pupils correct? 4.

Were both pupils correct? _____

5. Which has the greater area, a rectangle 4 feet by 6 feet or a square that measures 5 feet along each side? By how much greater? 5.

The _____ has the greater area.

It is _____ square foot greater.

6. Trina had a rectangular-shaped board that measured 6.5 feet by 4.2 feet. A 2-foot piece was cut off the length. What is the area of the piece cut off? What is the area of the other part? 6.

The area of the cut-off piece is _____ square feet.

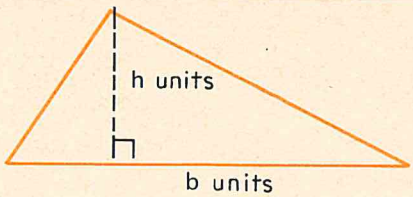
The area of the other part is _____ square feet.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Area of Triangles

To find the *area measure* (A) of a triangle, take $\frac{1}{2}$ the product of the measures of the *base* (b) and the *height* (h).



Find A if $b=16$ and $h=5$.

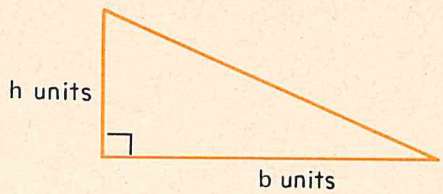
$A=\frac{1}{2}\times b\times h$

$=\frac{1}{2}\times 16\times 5$

$=\frac{1}{2}\times$ _____

$=$ _____

The area is _____ sq. units.



Find A if $b=12$ and $h=7$.

$A=\frac{1}{2}\times b\times h$

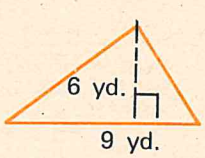
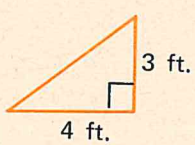
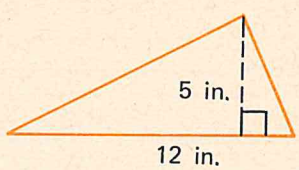
$=\frac{1}{2}\times$ _____ $\times$ _____

$=$ _____ $\times$ _____

$=$ _____

The area is _____ sq. units.

Find the area of each triangle below.

	a	*b*	*c*
1.			
	_____ sq. yd.	_____ sq. ft.	_____ sq. in.

Complete the table for each triangle described below.

	base	*height*	*area*
2.	12 ft.	6 ft.	_____ sq. ft.
3.	15 yd.	4 yd.	_____ sq. yd.
4.	$3\frac{1}{2}$ in.	4 in.	_____ sq. in.
5.	7.5 ft.	8.2 ft.	_____ sq. ft.
6.	$4\frac{1}{4}$ in.	$3\frac{1}{2}$ in.	_____ sq. in.
7.	12 yd.	$14\frac{1}{3}$ yd.	_____ sq. yd.

Check your answers. Record your score. Perfect score: 9 My score: _____

Problems

Solve each problem.

1. The base of a triangle is 6 feet long and the height is 9 feet. What is the area of the triangle?

The area is _____ square feet.

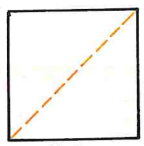
2. Suppose both the base and height of a triangle are half the length of those in problem 1. What is the area of the triangle?

The area is _____ square feet.

3. A triangular playing field has a base of 42 feet and a height of 54 feet. What is the area of the field?

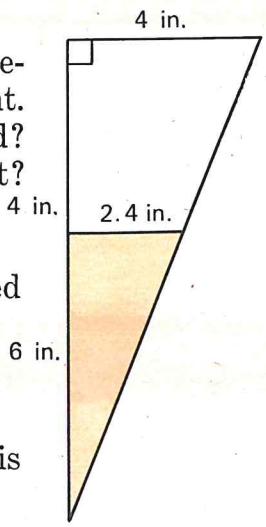
The area is _____ square feet.

4. A square photograph was cut into two parts as shown. What is the area of each part?



The area is _____ sq. in.

5. Suppose the colored region is removed from the drawing at the right. What is the area of the part removed? What is the area of the remaining part?



The area of the part that is removed is _____ sq. in.

The area of the part that remains is _____ sq. in.

6. In a triangle the sides that form a right angle are 3.2 yards long and 1.6 yards long. What is the area of the triangle?

The area is _____ square yards.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Area of Circles

$A = \pi \times r \times r$ is used to find the area measure of a circle.

Find A if $r = 4$.

$A = \pi \times r \times r$

$= 3.14 \times 4 \times$ _____

$= 3.14 \times$ _____

$=$ _____

The area is _____ sq. units.

Find A if $d = 14$.

(Since $d = 14$, $r = d \div 2$ or 7.)

$A = \pi \times r \times r$

$= \frac{22}{7} \times$ _____ $\times$ _____

$= \frac{22}{7} \times$ _____

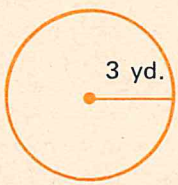
$=$ _____

The area is _____ sq. units.

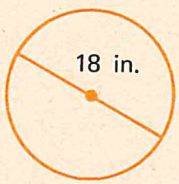
Find the area of each circle below. Use 3.14 for π.

a *b* *c*

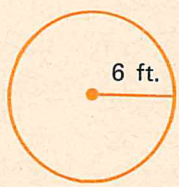
1.



_____ sq. yd.

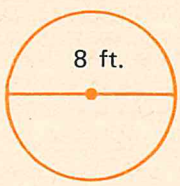


_____ sq. in.



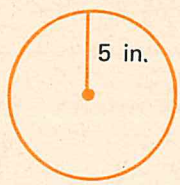
_____ sq. ft.

2.



_____ sq. ft.

_____ sq. yd.



_____ sq. in.

Complete the table. Use $3\frac{1}{7}$ for π.

	diameter	*radius*	*area*
3.	_____ ft.	21 ft.	_____ sq. ft.
4.	28 yd.	_____ yd.	_____ sq. yd.
5.	_____ in.	16 in.	_____ sq. in.
6.	70 ft.	_____ ft.	_____ sq. ft.
7.	_____ in.	10 in.	_____ sq. in.

Check your answers. Record your score. Perfect score: 16 My score: _____

Problems

Solve each problem. Use $3\frac{1}{7}$ for π in problems 1-4. Use 3.14 for π in problems 5-7.

1. What is the area of a circle if the diameter of the circle is 4 inches? **1.**

The area is _____ square inches.

2. What is the area of a circular flower bed if the radius is 42 inches? **2.**

The area is _____ square inches.

3. What would be the area of the flower bed in problem 2 if the radius were half as long? **3.**

The area would be _____ square inches.

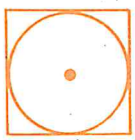
4. What would be the area of the flower bed in problem 2 if the radius were twice as long? **4.**

The area would be _____ square inches.

5. What is the area of a coin if the diameter of the coin is 1 inch? **5.**

The area is _____ square inch.

6. What is the area of the circle enclosed in the square? What is the area of the square? **6.**



The area of the circle is _____ square feet.

The area of the square is _____ square feet.

7. Which has the greater area, circle **A** with a 4-inch diameter or circle **B** with a 3-inch radius? How much greater? **7.**

Circle _____ has the greater area.

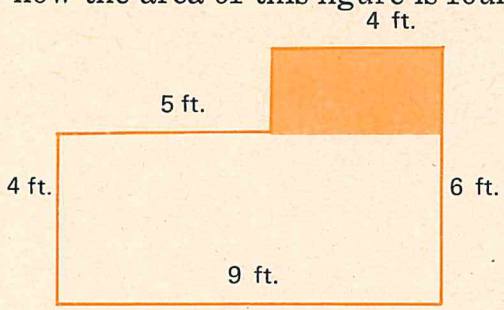
It is _____ square inches greater.

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Area

Study how the area of this figure is found.



area of colored part
$A = l \times w$
$= 4 \times 2$
$=$ _____

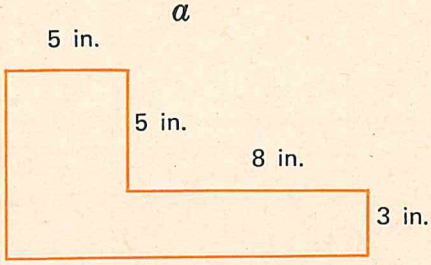
area of white part
$A = l \times w$
$= 9 \times 4$
$=$ _____

The total area is _____ + _____ or _____ sq. ft.

Find the area of each figure.

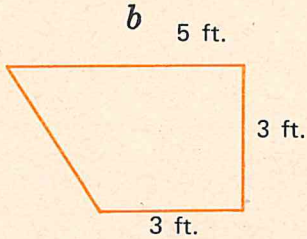
1.

a



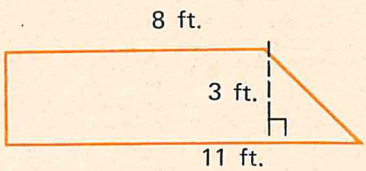
_____ sq. in.

b

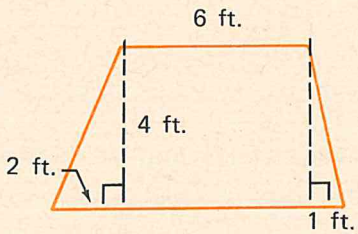


_____ sq. ft.

2.

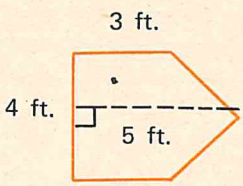


_____ sq. ft.

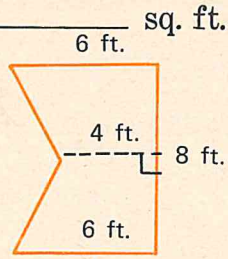


_____ sq. ft.

3.



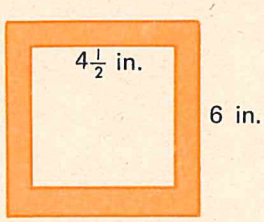
_____ sq. ft.



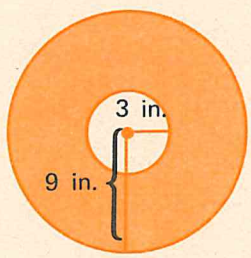
_____ sq. ft.

Find the area of the colored part of each figure.

4.



_____ sq. in.



_____ sq. in.

Check your answers. Record your score. Perfect score: 8 My score: _____

Problems

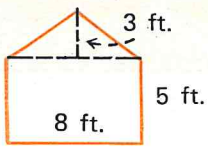
Solve each problem. Use 3.14 for π.

1. Mrs. Roberts has a one-story house that is 32 feet wide and 48 feet long. She plans to build an addition 12 feet by 16 feet. What will the total area of the house be then?

The total area will be _____ square feet.

1.

2. Mary has a garden shaped as shown below. What is the area of the garden?



The area is _____ square feet.

2.

3. Janice has a rectangular piece of paper that is 8 inches by 10 inches. She removed a 6-inch square section. What is the area of the remaining part?

The area is _____ square inches.

3.

4. Suppose that the paper in problem 3 is 16 inches by 20 inches. Then a 12-inch square section is removed. What is the area of the remaining part?

The area is _____ square inches.

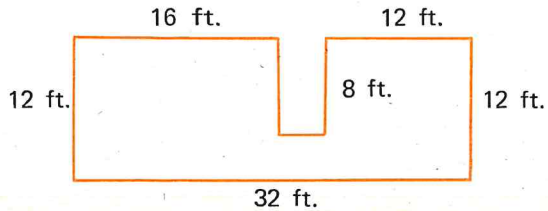
4.

5. The Treadles have a lot that is 55 feet by 120 feet. Their house is 32 feet by 38 feet. Their garage is 20 feet by 24 feet. How much of their lot is vacant?

_____ square feet of their lot is vacant.

5.

6. How many square feet of carpeting would be needed to carpet the area shown below?



_____ square feet would be needed.

6.

Check your answers. Record your score. Perfect score: 6 My score: _____

NAME _____

TEST—Perimeter and Area

Complete the table for each rectangle described below.

	length	*width*	*perimeter*	*area*
1.	7 ft.	5 ft.	_____ ft.	_____ sq. ft.
2.	3 in.	1.5 in.	_____ in.	_____ sq. in.
3.	$3\frac{1}{2}$ in.	$1\frac{1}{2}$ in.	_____ in.	_____ sq. in.
4.	5 yd.	5 yd.	_____ yd.	_____ sq. yd.

Complete the table for each triangle described below.

	base	*height*	*area*
5.	7 in.	8 in.	_____ sq. in.
6.	$9\frac{1}{2}$ ft.	4 ft.	_____ sq. ft.
7.	7.5 yd.	3.4 yd.	_____ sq. yd.

Complete the table for each circle described below. Use 3.14 for π.

	diameter	*radius*	*circumference*	*area*
8.	8 in.	_____ in.	_____ in.	_____ sq. in.
9.	_____ ft.	5.5 ft.	_____ ft.	_____ sq. ft.
10.	_____ yd.	_____ yd.	18.84 yd.	_____ sq. yd.

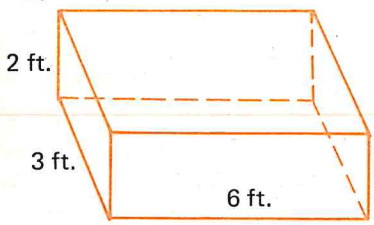
Check your answers. Record your score. Perfect score: 20 My score: _____

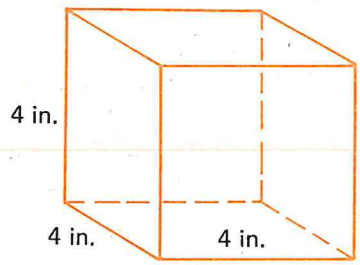
PRE-TEST—Volume

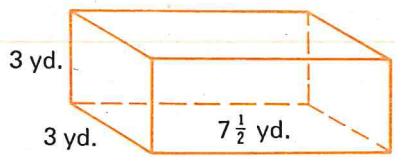
Find the volume of each rectangular solid.

a *b* *c*

1.



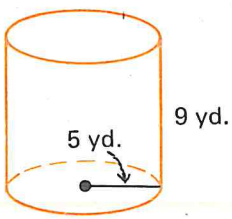


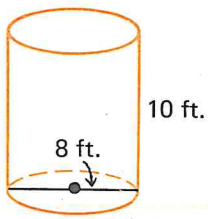


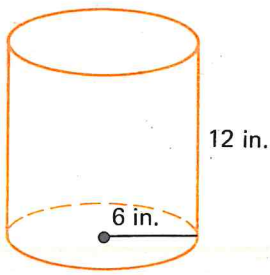
_____ cu. ft. _____ cu. in. _____ cu. yd.

Find the volume of each cylinder. Use 3.14 for π.

2.



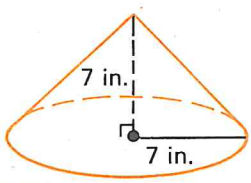


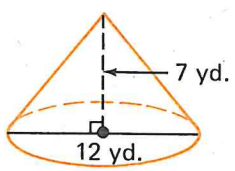


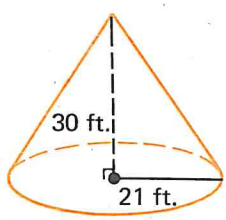
_____ cu. yd. _____ cu. ft. _____ cu. in.

Find the volume of each cone. Use $3\frac{1}{7}$ for π.

3.



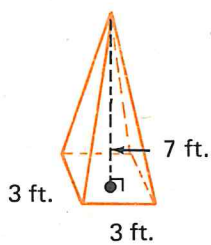


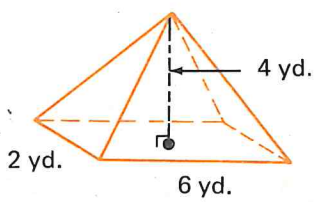


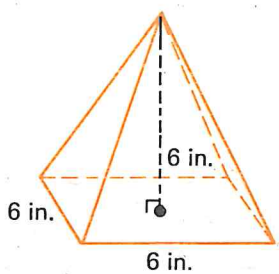
_____ cu. in. _____ cu. yd. _____ cu. ft.

Find the volume of each pyramid.

4.







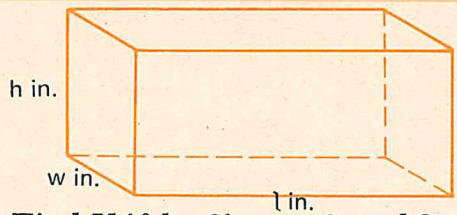
_____ cu. ft. _____ cu. yd. _____ cu. in.

Check your answers. Record your score. Perfect score: 12 My score: _____

NAME _____

Volume of Rectangular Solids

The *volume measure* (V) *of a rectangular solid* is the product of the *area measure of the base* (B) and the measure of the *height* (h). $V = B \times h$



Find V if $l = 6\frac{1}{2}$, $w = 4$, and $h = 3$.

$V = B \times h$

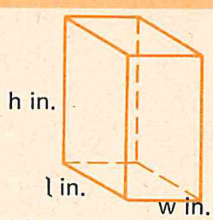
$= l \times w \times h$

$= 6\frac{1}{2} \times 4 \times 3$

$= ____ \times 3$

$= ____$

The volume is _____ cubic (cu.) in.



Find V if $l = 4$, $w = 3$, and $h = 6$.

$V = B \times h$

$= l \times w \times h$

$= ____ \times ____ \times ____$

$= ____ \times ____$

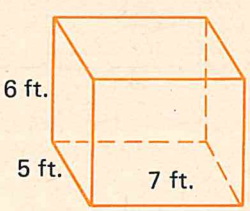
$= ____$

The volume is _____ cu. in.

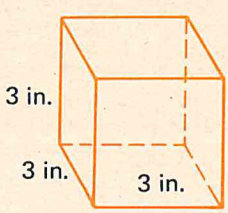
Find the volume of each rectangular solid.

a *b* *c*

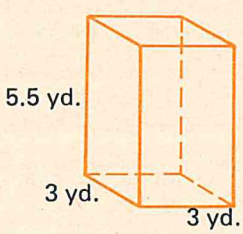
1.



_____ cu. ft.



_____ cu. in.



_____ cu. yd.

Complete the table for each rectangular solid described below.

	length	*width*	*height*	*volume*
2.	8 in.	6 in.	3 in.	_____ cu. in.
3.	$7\frac{1}{2}$ ft.	4 ft.	6 ft.	_____ cu. ft.
4.	3.2 in.	3.2 in.	4 in.	_____ cu. in.
5.	$5\frac{1}{4}$ yd.	$2\frac{1}{4}$ yd.	3 yd.	_____ cu. yd.
6.	$3\frac{1}{2}$ ft.	$2\frac{1}{2}$ ft.	1 ft.	_____ cu. ft.

Check your answers. Record your score. Perfect score: 8 My score: _____

Problems

Solve each problem.

1. The bottom of a box is $10\frac{1}{2}$ inches long and 5 inches wide. The box is 3 inches high. What is the volume of the box?

The volume is _____ cubic inches.

1.

2. A desk drawer is 12 inches wide, 18 inches long, and 6 inches deep. What is its volume?

The volume is _____ cubic inches.

2.

3. Assume each dimension in problem 2 is doubled. What would the volume of the drawer be?

The volume would be _____ cubic inches.

3.

4. A cube with each dimension 12 inches has a volume of 1 cubic foot. How many cubic inches are in 1 cubic foot?

_____ cubic inches are in 1 cubic foot.

4.

5. A cube with each dimension 3 feet has a volume of 1 cubic yard. How many cubic feet are in 1 cubic yard?

_____ cubic feet are in 1 cubic yard.

5.

6. Mark has a box that is 3 feet high, 4 feet wide, and 5 feet long. Jeff has a box that measures 4 feet along each edge. Whose box has the greater volume? How much greater is it?

_____ box has the greater volume.

It is _____ cubic feet greater.

6.

7. Ava has 500 one-inch cubes and a box 10 inches long, 8 inches wide, and 6 inches deep. Will there be too many or too few cubes to fill the box? How many extra or too few will there be?

There will be too _____ cubes to fill the box.

It will be _____ cubes _____.

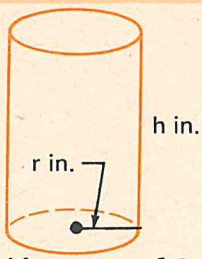
7.

Check your answers. Record your score. Perfect score: 10 My score: _____

NAME _____

Volume of Cylinders

The *volume measure* (V) *of a cylinder* is the product of the *area measure of the base* (B) and the measure of the *height* (h). $V = B \times h$



Find V if $r = 2$ and $h = 6$.

$V = B \times h$

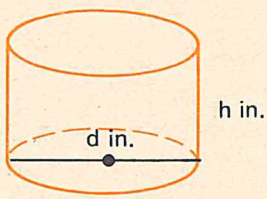
$= \pi \times r \times r \times h$

$= \frac{22}{7} \times 2 \times 2 \times 6$

$= \frac{528}{7}$

$= 75\frac{3}{7}$

The volume is _____ cu. in.



Find V if $d = 8$ and $h = 5$.

(Since $d = 8$, $r = 4$.)

$V = B \times h$

$= \pi \times r \times r \times h$

$= 3.14 \times ___ \times ___ \times ___$

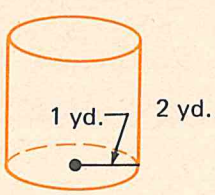
$=$ 251.20

The volume is _____ cu. in.

Find the volume of each cylinder. Use $3\frac{1}{7}$ for π.

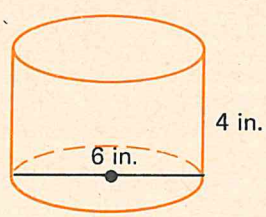
a

1.



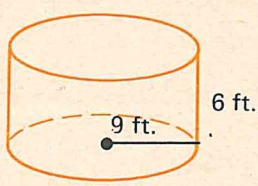
_____ cu. yd.

b



_____ cu. in.

c



_____ cu. ft.

Complete the table for each cylinder described below. Use 3.14 for π.

	diameter	*radius*	*height*	*volume*
2.	____ ft.	3 ft.	6 ft.	_____ cu. ft.
3.	____ in.	7 in.	4 in.	_____ cu. in.
4.	10 yd.	____ yd.	3 yd.	_____ cu. yd.
5.	____ in.	5 in.	2 in.	_____ cu. in.
6.	18 ft.	____ ft.	3 ft.	_____ cu. ft.

Check your answers. Record your score. Perfect score: 13 My score: _____

Problems

Solve each problem. Use 3.14 for π.

1. A coffee can has a 3-inch radius and is 8 inches high. What is the volume of the coffee can?

The volume is _____ cubic inches.

1.

2. Suppose the can in problem **1** is $\frac{1}{2}$ filled with coffee. How many cubic inches of coffee are in the can?

There are _____ cubic inches of coffee.

2.

3. A cylindrical container has a diameter of 4 inches and is 12 inches high. What is its volume?

Its volume is _____ cubic inches.

3.

4. Suppose the container in problem **3** had a diameter of 12 inches and was 4 inches high. What would its volume be?

Its volume would be _____ cubic inches.

4.

5. A cylindrical tank has a radius of 24 feet and is 12 feet high. What is the volume of the tank?

The volume is _____ cubic feet.

5.

6. Betty's juice container has a diameter of 6 inches and a height of 8 inches. Carol's has a diameter of 8 inches and a height of 6 inches. Whose container will hold the most juice? How much more?

_____ container will hold the most juice.

It will hold _____ cubic inches more.

6.

7. There are 2 cylindrical containers. Container **A** has a 1-foot radius and is 1 foot high. Container **B** has a 2-foot radius and is 1 foot high. How many times greater is the volume of the larger container than the volume of the smaller one?

It is _____ times greater.

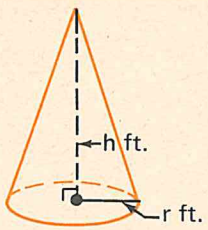
7.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Volume of Cones

The *volume measure* (V) *of a cone* is $\frac{1}{3}$ the product of the *area measure of the base* (B) and the measure of the *height* (h). $V=\frac{1}{3}\times B\times h$



Find V if $r=3$ and $h=9$.

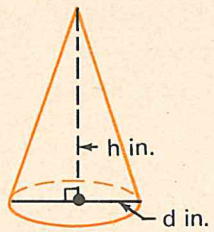
$V=\frac{1}{3}\times B\times h$

$=\frac{1}{3}\times\pi\times r\times r\times h$

$=\frac{1}{3}\times\frac{22}{7}\times 3\times 3\times 9$

$=84\frac{6}{7}$

The volume is _____ cu. ft.



Find V if $d=2$ and $h=3$.
(Since $d=2$, $r=1$.)

$V=\frac{1}{3}\times B\times h$

$=\frac{1}{3}\times\pi\times r\times r\times h$

$=\frac{1}{3}\times 3.14\times___\times___\times___$

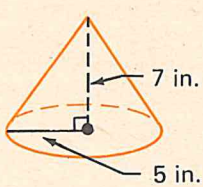
$=$ _____

The volume is _____ cu. in.

Find the volume of each cone. Use $3\frac{1}{7}$ for π.

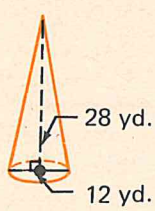
1.

a



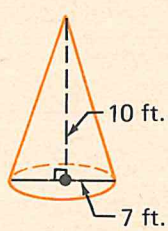
_____ cu. in.

b



_____ cu. yd.

c



_____ cu. ft.

Complete the table for each cone described below. Use 3.14 for π.

	diameter	*radius*	*height*	*volume*
2.	_____ ft.	2 ft.	3 ft.	_____ cu. ft.
3.	_____ in.	6 in.	10 in.	_____ cu. in.
4.	14 yd.	_____ yd.	3 yd.	_____ cu. yd.
5.	_____ in.	10 in.	9 in.	_____ cu. in.
6.	18 ft.	_____ ft.	6 ft.	_____ cu. ft.

Check your answers. Record your score. Perfect score: 13 My score: _____

Problems

Solve each problem. Use $3\frac{1}{7}$ for π.

1. The Drink-O Company makes a paper cup that is shaped like a cone. The radius of the opening is 1 inch. The cup is 3 inches deep. What is the volume of the cup? **1.**

The volume is _____ cubic inches.

2. A cone-shaped hat has a 7-inch diameter and is 21 inches high. What is the volume of the hat? **2.**

The volume is _____ cubic inches.

3. A cup is in the shape of a cone. The opening of the cup has a 6-inch diameter. The cup is 3 inches deep. What is the volume of the cup? **3.**

The volume is _____ cubic inches.

4. A chemist has two cone-shaped containers. Cone **A** has a 7-inch radius and is 6 inches deep. Cone **B** has a 6-inch radius and is 7 inches deep. Which cone has the greater volume? How much greater? **4.**

Cone _____ has the greater volume.

It is _____ cubic inches greater.

5. Roberto used a sheet of newspaper to form a cone. Both the diameter and the height of the cone are 2 feet. What is the volume of the cone? **5.**

The volume is _____ cubic feet.

6. The cafeteria serves water in cone-shaped cups. The opening of a cup has a diameter of 3 inches and the cone is 4 inches deep. How many cubic inches of water can be put into a cup? **6.**

_____ cubic inches can be put into a cup.

7. Suppose the cup in problem **6** had a 4-inch diameter and was 3 inches deep. How many cubic inches of water can be put into a cup? **7.**

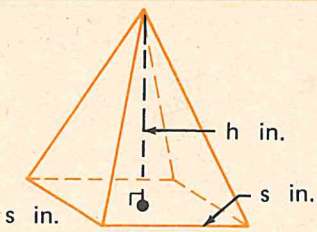
_____ cubic inches can be put into a cup.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Volume of Pyramids

The *volume measure* (V) *of a pyramid* is $\frac{1}{3}$ the product of the *area measure of the base* (B) and the measure of the *height* (h). $V = \frac{1}{3} \times B \times h$



Find V if $s = 6$ and $h = 8$.

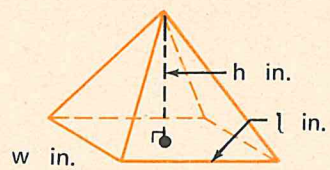
$V = \frac{1}{3} \times B \times h$

$= \frac{1}{3} \times s \times s \times h$

$= \frac{1}{3} \times 6 \times 6 \times 8$

$=$ _____

The volume is _____ cu. in.



Find V if $l = 5$, $w = 3$, and $h = 4$.

$V = \frac{1}{3} \times B \times h$

$= \frac{1}{3} \times l \times w \times h$

$= \frac{1}{3} \times$ ___ $\times$ ___ $\times$ ___

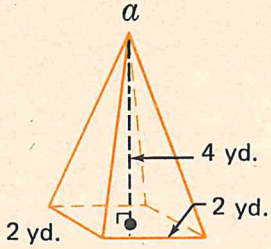
$=$ _____

The volume is _____ cu. in.

Find the volume of each pyramid.

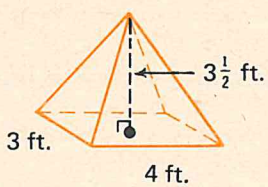
1.

a



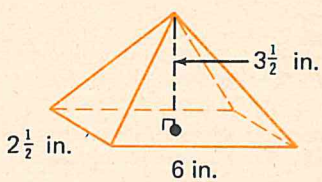
_____ cu. yd.

b



_____ cu. ft.

c



_____ cu. in.

Complete the table for each pyramid described below.

	Base			
	length	*width*	*height*	*volume*
2.	17 in.	6 in.	9 in.	_____ cu. in.
3.	14.2 ft.	6 ft.	7 ft.	_____ cu. ft.
4.	$19\frac{1}{2}$ yd.	$19\frac{1}{2}$ yd.	12 yd.	_____ cu. yd.
5.	12 ft.	$6\frac{1}{2}$ ft.	$8\frac{1}{2}$ ft.	_____ cu. ft.
6.	$9\frac{1}{4}$ in.	$2\frac{1}{2}$ in.	$4\frac{1}{4}$ in.	_____ cu. in.

Check your answers. Record your score. Perfect score: 8 My score: _____

Problems

Solve each problem.

1. The base of a pyramid is a square. Each side of the square is 27 feet long. The pyramid is 18 feet high. What is the volume of the pyramid?

The volume is _____ cubic feet.

1.

2. A church steeple has a square base, each side measuring 14 feet. The point of the steeple is 33 feet above the base. What is the volume of the church steeple?

The volume is _____ cubic feet.

2.

3. A pyramid has a rectangular base that is 19 feet by 12 feet. The height of the pyramid is 28 feet. What is its volume?

Its volume is _____ cubic feet.

3.

4. Pyramids A and B have square bases. A is 16 feet high. Each side of its base is 15 feet long. B is 15 feet high. Each side of its base is 16 feet long. Which has the greater volume? How much greater is it?

Pyramid _____ has the greater volume.

It is _____ cubic feet greater.

4.

5. Each side of the base of a square pyramid is 16 yards long. The height of the pyramid is 21 yards. What is its volume?

The volume is _____ cubic yards.

5.

6. Suppose the height of the pyramid in problem 5 was doubled. What is the volume of the pyramid?

The volume is _____ cubic yards.

6.

7. Suppose both the height and length of each side of the base of the pyramid in problem 5 were doubled. What is the volume of the pyramid?

The volume is _____ cubic yards.

7.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Volume

Complete the table for each rectangular solid described below.

	length	*width*	*height*	*volume*
1.	8 in.	5 in.	3 in.	_____ cu. in.
2.	9 yd.	7 yd.	$4\frac{1}{2}$ yd.	_____ cu. yd.
3.	$5\frac{1}{2}$ ft.	4 ft.	$3\frac{1}{2}$ ft.	_____ cu. ft.
4.	3 ft.	3 ft.	3 ft.	_____ cu. ft.

Complete the table for each cylinder described below. Use $3\frac{1}{7}$ for π.

	diameter	*radius*	*height*	*volume*
5.	____ yd.	14 yd.	12 yd.	_____ cu. yd.
6.	____ ft.	10 ft.	28 ft.	_____ cu. ft.
7.	42 in.	____ in.	25 in.	_____ cu. in.

Complete the table for each cone described below. Use 3.14 for π.

	diameter	*radius*	*height*	*volume*
8.	____ ft.	6 ft.	3 ft.	_____ cu. ft.
9.	4 in.	____ in.	9 in.	_____ cu. in.
10.	____ yd.	8 yd.	12 yd.	_____ cu. yd.

Complete the table for each pyramid described below.

	Base			
	length	*width*	*height*	*volume*
11.	7 ft.	7 ft.	10 ft.	_____ cu. ft.
12.	4 yd.	3 yd.	$6\frac{1}{2}$ yd.	_____ cu. yd.
13.	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	_____ cu. in.
14.	25 yd.	25 yd.	25 yd.	_____ cu. yd.

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem. Use 3.14 for π.

1. A mobile home is 12 feet wide, 60 feet long, and $8\frac{1}{2}$ feet high. How many cubic feet are in this home?

There are _____ cubic feet.

1.

2. A cylindrical container has a diameter of 10 inches and is 12 inches high. What is the volume of the container?

The volume is _____ cubic inches.

2.

3. A cone-shaped container is 12 inches high. The base of the cone has a 10-inch diameter. What is the volume of the container?

The volume is _____ cubic inches.

3.

4. The Great Pyramid of Cheops had a square base that measured 754.5 feet on each side. Its original height was 481 feet. What was the volume of the Great Pyramid of Cheops?

The volume was _____ cubic feet.

4.

5. Marty has a rectangular box that is 6 inches wide, 6 inches long, and 6 inches high. Helen has a cylindrical can that has a 6-inch diameter and is 6 inches high. Who has the container with the greater volume? How much greater is it?

_____ has the container with the greater volume.

It is _____ cubic inches greater.

5.

6. A cone is 6 inches high. Its base has a diameter of 6 inches. Compare this with a pyramid 6 inches high whose base is a 6-inch square. Which has the greater volume? How much greater is it?

The _____ has the greater volume.

It is _____ cubic inches greater.

6.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

TEST—Volume

Complete the table for each rectangular solid described below.

	length	*width*	*height*	*volume*
1.	6 yd.	4 yd.	8 yd.	_____ cu. yd.
2.	7 in.	7 in.	7 in.	_____ cu. in.
3.	9 ft.	$7\frac{1}{2}$ ft.	6 ft.	_____ cu. ft.
4.	$5\frac{1}{2}$ in.	$3\frac{1}{2}$ in.	2 in.	_____ cu. in.

Complete the table for each cylinder described below. Use 3.14 for π.

	diameter	*radius*	*height*	*volume*
5.	____ ft.	12 ft.	8 ft.	_____ cu. ft.
6.	16 in.	____ in.	19 in.	_____ cu. in.
7.	____ yd.	10 yd.	12 yd.	_____ cu. yd.

Complete the table for each cone described below. Use $3\frac{1}{7}$ for π.

	diameter	*radius*	*height*	*volume*
8.	____ in.	7 in.	12 in.	_____ cu. in.
9.	28 ft.	____ ft.	14 ft.	_____ cu. ft.
10.	6 yd.	____ yd.	21 yd.	_____ cu. yd.

Complete the table for each pyramid described below.

	Base			
	length	*width*	*height*	*volume*
11.	12 ft.	8 ft.	9 ft.	_____ cu. ft.
12.	10 in.	$6\frac{1}{2}$ in.	12 in.	_____ cu. in.
13.	3 yd.	3 yd.	3 yd.	_____ cu. yd.
14.	140 ft.	140 ft.	75 ft.	_____ cu. ft.

Check your answers. Record your score Perfect score: 20 My score: _____

PRE-TEST—Review

Complete the following as indicated.

	a	*b*	*c*	*d*
1.	$\begin{array}{r} 72809 \\ -45364 \\ \hline \end{array}$	$\begin{array}{r} 3.209 \\ 13.8 \\ 5.63 \\ +.082 \\ \hline \end{array}$	$\begin{array}{r} 4\frac{3}{8} \\ -3\frac{5}{8} \\ \hline \end{array}$	$\begin{array}{r} 2\frac{2}{3} \\ 1\frac{1}{2} \\ +\frac{3}{5} \\ \hline \end{array}$
2.	$\begin{array}{r} 4216 \\ \times .018 \\ \hline \end{array}$	$24\overline{)8912}$	$2\frac{1}{3} \times \frac{9}{14}$	$2\frac{1}{4} \div 1\frac{1}{3}$

Complete the following.

	a	*b*
3.	_____ is 24% of 400.	_____ is $9\frac{1}{2}$% of 1600.
4.	250 is _____% of 1500.	7 is 5% of _____.

Complete the table for each rectangle described below.

	length	*width*	*perimeter*	*area*
5.	7 ft.	$5\frac{1}{2}$ ft.	_____ ft.	_____ sq. ft.
6.	13 in.	13 in.	_____ in.	_____ sq. in.

Complete the table for each cylinder described below. Use $3\frac{1}{7}$ for π.

	diameter	*radius*	*height*	*volume*
7.	_____ in.	14 in.	20 in.	_____ cu. in.
8.	4 ft.	_____ ft.	7 ft.	_____ cu. ft.

Check your answers. Record your score. Perfect score: 20 My score: _____

NAME _____

Addition

Add.

	a	*b*	*c*	*d*	*e*
1.	38 +41	350 +762	954 +3869	581 4263 +785	16927 3846 +79217
2.	17 23 44 +26	73 85 120 +384	7263 4850 9218 +3470	2148 3147 165 21533 +4211	72683 38468 52170 30600 +52119
3.	4.2 +2.3	3.5 +2.63	4.25 +.63	.721 1.483 +2.162	24.3 3.142 +17.88
4.	.4 1.2 7.3 +2.5	.7 2 3.84 +2.56	.082 .075 .036 +.453	1.23 22.7 3.187 .7 +4.83	3.126 .42 5.3 .681 +24.2

Express each sum in simplest form.

	a	*b*	*c*	*d*	*e*
5.	$\frac{2}{5}$ $+\frac{2}{5}$	$1\frac{3}{4}$ $+2\frac{3}{4}$	$\frac{2}{3}$ $+\frac{1}{2}$	$1\frac{5}{9}$ $+\frac{2}{3}$	$3\frac{7}{10}$ $+4\frac{5}{8}$
6.	$\frac{1}{8}$ $\frac{3}{8}$ $+\frac{2}{8}$	$3\frac{3}{5}$ $4\frac{4}{5}$ $+\frac{3}{5}$	$\frac{1}{3}$ $\frac{2}{5}$ $+\frac{1}{2}$	$3\frac{1}{3}$ $2\frac{3}{4}$ $+4\frac{1}{2}$	$2\frac{5}{6}$ $\frac{1}{3}$ $+1\frac{3}{4}$

Check your answers. Record your score. Perfect score: 30 My score: _____

Problems

Solve each problem.

1. The population of city **A** is 15,423; city **B** is 13,582; city **C** is 8,245; city **D** is 29,483; and city **E** is 13,852. What is the total population of the three largest cities? **1.**

The total population is _____.

2. What is the total population of all the cities in problem **1**? **2.**

The total population is _____.

3. Mr. Treadle wrote the following numerals on the board: 31.268; 423.12; 122.5; .031; and 14.005. What is the sum of the three least numbers? **3.**

The sum is _____.

4. In problem **3**, what is the sum of all the numbers Mr. Treadle wrote on the board? **4.**

The sum is _____.

5. One nail is $1\frac{3}{8}$ inches long, another is $\frac{7}{8}$ inch long, and still another is $2\frac{5}{8}$ inches long. What is the total length of the two shorter nails? **5.**

The total length is _____ inches.

6. What is the total length of all three nails in problem **5**? **6.**

The total length is _____ inches.

7. Book **X** is $1\frac{1}{2}$ inches thick. Book **Y** is $2\frac{1}{4}$ inches thick and Book **Z** is $1\frac{3}{8}$ inches thick. What is the combined thickness of books **X** and **Y**? **7.**

The combined thickness is _____ inches.

8. What is the combined thickness of all the books in problem **7**? **8.**

The combined thickness is _____ inches.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Subtraction

Subtract.

	a	*b*	*c*	*d*	*e*
1.	$\begin{array}{r} 74 \\ -32 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ -46 \\ \hline \end{array}$	$\begin{array}{r} 305 \\ -153 \\ \hline \end{array}$	$\begin{array}{r} 728 \\ -259 \\ \hline \end{array}$	$\begin{array}{r} 4256 \\ -673 \\ \hline \end{array}$
2.	$\begin{array}{r} 3081 \\ -1293 \\ \hline \end{array}$	$\begin{array}{r} 4216 \\ -786 \\ \hline \end{array}$	$\begin{array}{r} 53142 \\ -2483 \\ \hline \end{array}$	$\begin{array}{r} 42806 \\ -41732 \\ \hline \end{array}$	$\begin{array}{r} 30125 \\ -2617 \\ \hline \end{array}$
3.	$\begin{array}{r} .5 \\ -.3 \\ \hline \end{array}$	$\begin{array}{r} 4.4 \\ -2.2 \\ \hline \end{array}$	$\begin{array}{r} .314 \\ -.042 \\ \hline \end{array}$	$\begin{array}{r} 1.206 \\ -.317 \\ \hline \end{array}$	$\begin{array}{r} 4.25 \\ -1.32 \\ \hline \end{array}$
4.	$\begin{array}{r} 8.73 \\ -4.2 \\ \hline \end{array}$	$\begin{array}{r} .546 \\ -.01 \\ \hline \end{array}$	$\begin{array}{r} 7.38 \\ -2.5 \\ \hline \end{array}$	$\begin{array}{r} 41.687 \\ -2.3 \\ \hline \end{array}$	$\begin{array}{r} 36.4 \\ -9 \\ \hline \end{array}$
5.	$\begin{array}{r} 7.8 \\ -.34 \\ \hline \end{array}$	$\begin{array}{r} 4.26 \\ -1.731 \\ \hline \end{array}$	$\begin{array}{r} 12.6 \\ -3.003 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -1.25 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ -2.461 \\ \hline \end{array}$

Express each difference in simplest form.

	a	*b*	*c*	*d*	*e*
6.	$\begin{array}{r} \frac{7}{8} \\ -\frac{5}{8} \\ \hline \end{array}$	$\begin{array}{r} \frac{9}{10} \\ -\frac{3}{10} \\ \hline \end{array}$	$\begin{array}{r} 5\frac{7}{12} \\ -2\frac{4}{12} \\ \hline \end{array}$	$\begin{array}{r} 3\frac{8}{9} \\ -2\frac{5}{9} \\ \hline \end{array}$	$\begin{array}{r} 6\frac{3}{4} \\ -\frac{1}{4} \\ \hline \end{array}$
7.	$\begin{array}{r} \frac{7}{8} \\ -\frac{3}{4} \\ \hline \end{array}$	$\begin{array}{r} \frac{5}{7} \\ -\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} 7\frac{2}{3} \\ -4\frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} 3\frac{5}{6} \\ -\frac{1}{4} \\ \hline \end{array}$	$\begin{array}{r} 9\frac{9}{10} \\ -2\frac{3}{8} \\ \hline \end{array}$
8.	$\begin{array}{r} 4\frac{3}{5} \\ -2\frac{5}{6} \\ \hline \end{array}$	$\begin{array}{r} 3\frac{5}{8} \\ -1\frac{9}{10} \\ \hline \end{array}$	$\begin{array}{r} 1\frac{2}{3} \\ -\frac{5}{6} \\ \hline \end{array}$	$\begin{array}{r} 4\frac{4}{5} \\ -1\frac{7}{8} \\ \hline \end{array}$	$\begin{array}{r} 13\frac{2}{9} \\ -6\frac{5}{6} \\ \hline \end{array}$

Check your answers. Record your score. Perfect score: 40 My score: _____

Problems

Solve each problem.

1. There were 4,325 cartons shipped Monday; 3,482 Tuesday; 3,500 Wednesday; and 785 Thursday. What is the difference between the greatest number of cartons shipped and the least number shipped?

The difference is _____.

1.

2. In problem **1**, what is the difference between the number of cartons shipped on Tuesday and the number of cartons shipped on Wednesday?

The difference is _____.

2.

3. Consider the following: 42.18; 308.3; 421.16; 3.184; and 75.3. What is the difference between the two greatest numbers?

The difference is _____.

3.

4. In problem **3**, what is the difference between the two least numbers?

The difference is _____.

4.

5. Joan drew a line segment $3\frac{3}{8}$ inches long. The line segment was supposed to be $2\frac{1}{8}$ inches long. How much too long is the segment she drew?

The line segment is _____ inches too long.

5.

6. Suppose the line segment in problem **5** was to be $3\frac{5}{8}$ inches long. How much too short is the segment Joan drew?

The line segment is _____ inch too short.

6.

7. Mrs. Ramada prepared $7\frac{3}{4}$ gallons of punch for the party. There were $1\frac{1}{2}$ gallons left over. How many gallons of punch were used?

_____ gallons of punch were used.

7.

Check your answers. Record your score. Perfect score: 7 My score: _____

NAME _____

Multiplication

Multiply.

	a	*b*	*c*	*d*
1.	73 ×6	428 ×9	4216 ×5	3082 ×6
2.	31 ×26	426 ×31	531 ×175	7042 ×102
3.	.32 ×6	.13 ×.6	17.8 ×.4	312 ×.008
4.	.31 ×.31	4.23 ×.032	411.6 ×.306	38.04 ×1.32

Express each product in simplest form.

	a	*b*	*c*	*d*
5.	$\frac{3}{4}\times\frac{5}{7}$	$\frac{5}{9}\times\frac{6}{7}$	$1\frac{2}{3}\times\frac{3}{5}$	$2\frac{2}{5}\times3\frac{3}{4}\times\frac{1}{2}$

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem.

1. A machine packs 6 items in each box. How many items would be packed in 385 boxes?

_____ items would be packed in 385 boxes. **1.**

2. There are 22 slices in each loaf of Good-E bread. How many slices would there be in 1,575 loaves of Good-E bread?

There would be _____ slices. **2.**

3. Each sheet of cardboard is .018 inch thick. What would be the combined thickness of 9 sheets of cardboard?

The combined thickness would be _____ inch. **3.**

4. Mrs. Carlson wrote .08; 7.34; .42; and 6.1 on the board. She told the students to find the product of the two greatest numbers. What is that product?

That product is _____. **4.**

5. What is the product of the two least numbers in problem 4?

The product is _____. **5.**

6. Each box weighs $8\frac{1}{2}$ pounds. How many pounds would 4 such boxes weigh?

Four boxes would weigh _____ pounds. **6.**

7. Consider $\frac{7}{8}$, $\frac{2}{3}$, and $2\frac{2}{7}$. What is the product of the two greatest numbers?

The product is _____. **7.**

8. What is the product of the two least numbers in problem 7?

The product is _____. **8.**

9. What is the product of all three numbers in problem 7?

The product is _____. **9.**

Check your answers. Record your score. Perfect score: 9 My score: _____

NAME _____

Division

Divide.

	a	*b*	*c*	*d*
1.	$3\overline{)72}$	$4\overline{)136}$	$7\overline{)940}$	$6\overline{)4955}$
2.	$12\overline{)84}$	$14\overline{)448}$	$16\overline{)5146}$	$24\overline{)16884}$
3.	$7\overline{)20.3}$	$8\overline{).0144}$	$.9\overline{)1.854}$	$.006\overline{).024}$
4.	$1.6\overline{).8}$	$.12\overline{)54}$	$3.1\overline{)2.232}$	$.45\overline{).5535}$

Express each quotient in simplest form.

	a	*b*	*c*	*d*
5.	$\frac{7}{8} \div \frac{2}{3}$	$\frac{9}{10} \div \frac{3}{5}$	$2\frac{2}{5} \div \frac{3}{10}$	$2\frac{2}{3} \div 1\frac{1}{9}$

Check your answers. Record your score. Perfect score: 20 My score: _____

Problems

Solve each problem.

1. Tracy is to put 6 oranges in each bag. How many bags can she fill if she has 752 oranges in all? How many oranges will be left over?

She can fill _____ bags.

_____ oranges will be left over.

1.

2. It took 27 buses to transport 1,728 people. There was the same number of people on each bus. How many people were on each bus?

_____ people were on each bus.

2.

3. There are 71.4 pounds of chemical to be put into containers. Each container will hold .6 pound. How many containers will be needed?

_____ containers will be needed.

3.

4. Consider 1.6; .016; 16; and .16. What is the quotient if you divide the greatest number by the least number?

The quotient is _____.

4.

5. In problem 4, what is the quotient if you divide the least number by the greatest number?

The quotient is _____.

5.

6. It takes $\frac{1}{2}$ hour to make a batch of candy. At that rate, how many batches of candy could be made in $\frac{9}{10}$ hour?

_____ batches could be made.

6.

7. A box of gadgets weighs $6\frac{3}{4}$ pounds. Each gadget weighs $\frac{3}{4}$ pound. How many gadgets are in the box?

_____ gadgets are in the box.

7.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Proportions and Per cent

Solve each of the following.

	a	*b*	*c*
1.	$\frac{n}{6}=\frac{24}{36}$	$\frac{10}{12}=\frac{n}{6}$	$\frac{7}{8}=\frac{42}{n}$
2.	$\frac{52}{n}=\frac{2}{3}$	$\frac{n}{56}=\frac{6}{8}$	$\frac{75}{100}=\frac{n}{20}$
3.	$\frac{n}{75}=\frac{8}{100}$	$\frac{14}{15}=\frac{n}{30}$	$\frac{64}{n}=\frac{12}{15}$

Complete the following.

	a	*b*
4.	_____ is 25% of 300.	_____ is 20% of 450.
5.	_____ is 5% of 72.	_____ is 3% of 240.
6.	_____ is $33\frac{1}{3}$% of 93.	_____ is 100% of 754.
7.	_____ is 28.5 % of 250.	_____ is 75% of 392.
8.	_____ is 8.25 % of 32.	_____ is 40% of 1250.
9.	_____ is 110% of 45.	_____ is 250% of 50.
10.	_____ is 5.5 % of 1450.	_____ is 95% of 650.

Check your answers. Record your score. Perfect score: 23 My score: _____

Problems

Solve each problem.

1. As gear **A** revolves twice, gear **B** revolves five times. Gear **B** has revolved 30 times. How many times has gear **A** revolved? **1.**

Gear **A** has revolved _____ times.

2. At Elmwood School the ratio of boys to girls is 5 to 6. There are 75 boys at the school. How many girls are there? **2.**

There are _____ girls.

3. The ratio of teachers to boys in problem **2** is 1 to 15. How many teachers are at the school? **3.**

_____ teachers are in the school.

4. Twelve per cent of the employees were either late or absent today. There are 150 employees in all. How many were either late or absent today? **4.**

_____ were either late or absent.

5. Mr. Jackson bought a new suit for $85. There is a 6% sales tax. How much was the sales tax on this purchase? **5.**

He will pay $_____ sales tax.

6. Of the 1,540 students in Haley School 45% are boys. How many boys are in the school? **6.**

_____ boys are in the school.

7. The sales tax is 5.5%. How much is the sales tax on a $200 purchase? **7.**

The tax would be $_____.

8. What would the tax be in problem **7** on a $540 purchase? **8.**

The tax would be $_____.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Per cent and Interest

Complete the following.

	a	*b*
1.	_____ is 10% of 750.	_____ is 20% of 75.
2.	_____ is 16% of 250.	_____ is 7.5% of 42.
3.	.84 is 3% of _____.	98 is 25% of _____.
4.	220 is 110% of _____.	6.6 is 5.5% of _____.
5.	35 is _____% of 500.	26 is _____% of 325.
6.	54.6 is _____% of 182.	9 is _____% of 200.

Complete the following.

	principal	*rate*	*time*	*interest*
7.	$300	5%	2 years	_____
8.	_____	$5\frac{1}{2}$%	5 years	$176
9.	$350	_____%	$2\frac{1}{2}$ years	$35
10.	$1260	8%	$1\frac{1}{2}$ years	_____
11.	$800	$5\frac{1}{4}$%	_____ years	$126
12.	_____	7%	2 years	$56

Check your answers. Record your score. Perfect score: 18 My score: _____

Problems

Solve each problem.

1. There are 1,525 students in a school. In the school election, 92% of the students voted. How many students voted?

_____ students voted.

1.

2. Mr. Peters bought a radio for $28. He also had to pay $1.68 sales tax on the purchase price. What was the rate of sales tax?

The rate was _____%.

2.

3. When a plane is loaded to 65% of capacity, there are 117 passengers on the plane. How many passengers will be on the plane when it is loaded to capacity?

_____ passengers will be on the plane.

3.

4. Mildred deposited $250 in a savings account that pays 6% interest a year. After 2 years, how much interest would be earned? What would be the total amount in the account?

$_____ interest would be earned.

$_____ would be in the account.

4.

5. The Sims deposited money at 5% interest for 1 year. They received $6.40 interest. How much did they deposit?

They deposited $_____.

5.

6. Suppose you deposit $1,450 at $4\frac{1}{2}$% annual interest. How long would it take to earn $130.50?

It would take _____ years.

6.

7. Mrs. Rundles inspected 2,450 gizmos. She found 147 to be defective. What per cent of the gizmos she inspected were defective?

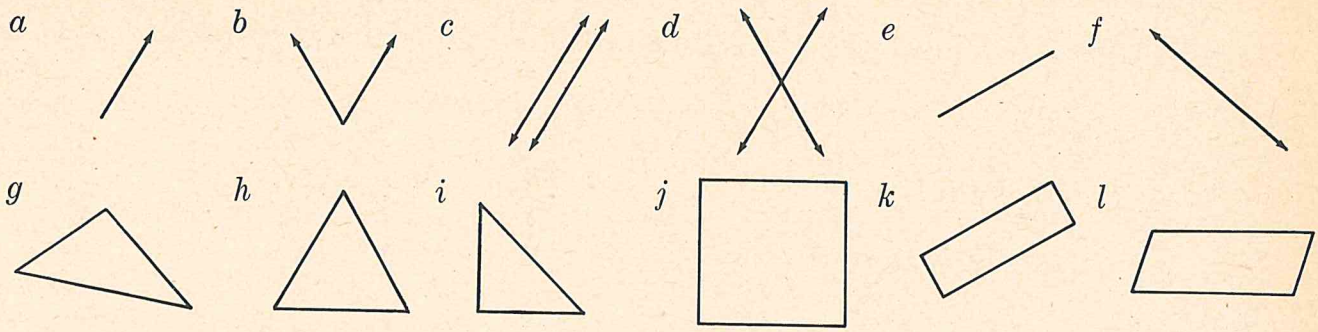
_____% were found to be defective.

7.

Check your answers. Record your score. Perfect score: 8 My score: _____

NAME _____

Geometry



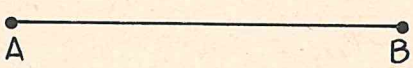
On each ___ below, write the letters of the figures described above.

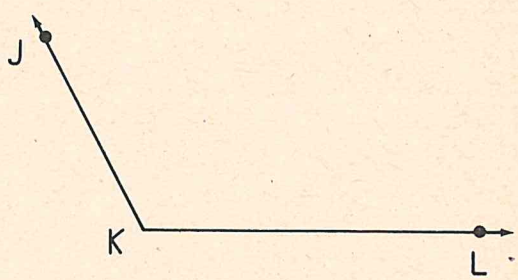
	a	*b*	*c*
1.	___ line	___ acute triangle	_____ quadrilateral
2.	___ line segment	___ right triangle	_____ parallelogram
3.	___ ray	___ obtuse triangle	_____ rhombus
4.	___ angle	___ equilateral triangle	_____ rectangle
5.	___ intersecting lines	___ isosceles triangle	_____ square
6.	___ parallel lines	___ scalene triangle	

Use a compass and straightedge to bisect each of the following.

a *b*

7.



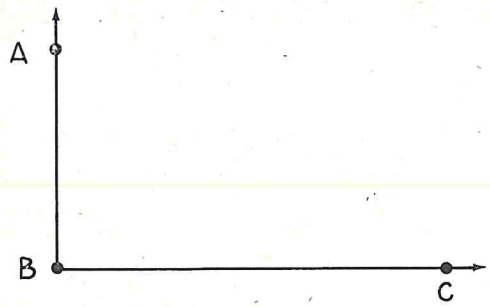


Check your answers. Record your score. Perfect score: 19 My score: _____

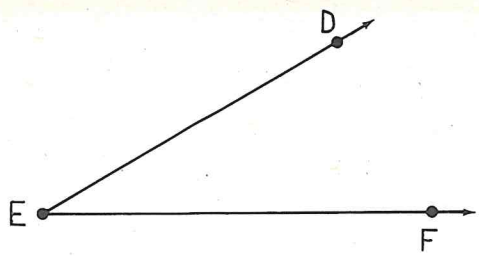
Geometry

Use a compass and straightedge to construct an angle congruent to each of the following.

1.



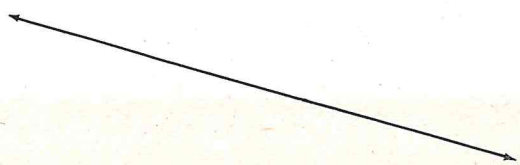
2.



Use a compass and straightedge to construct a line parallel to each of the following.

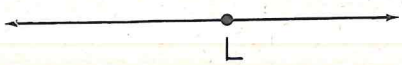
a *b*

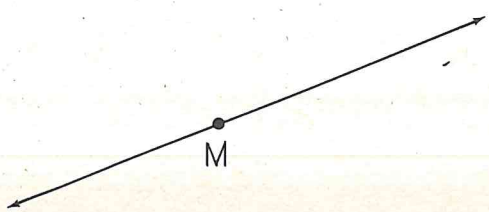
3.



Use a compass and straightedge to construct a line perpendicular to each of the following lines at the point given.

4.





Check your answers. Record your score. Perfect score: 6 My score: _____

NAME _____

Perimeter and Area

Complete the table for each rectangle described below.

	length	*width*	*perimeter*	*area*
1.	9 ft.	6 ft.	_____ ft.	_____ sq. ft.
2.	8 ft.	8 ft.	_____ ft.	_____ sq. ft.
3.	$4\frac{1}{2}$ in.	3 in.	_____ in.	_____ sq. in.
4.	$3\frac{1}{4}$ yd.	$2\frac{1}{3}$ yd.	_____ yd.	_____ sq. yd.

Complete the table for each triangle described below.

	base	*height*	*area*
5.	9 ft.	6 ft.	_____ sq. ft.
6.	$3\frac{1}{2}$ yd.	4 yd.	_____ sq. yd.
7.	6 in.	$4\frac{1}{4}$ in.	_____ sq. in.
8.	$7\frac{1}{2}$ ft.	8 ft.	_____ sq. ft.

Complete the table for each circle described below. Use 3.14 for π.

	diameter	*radius*	*circumference*	*area*
9.	10 ft.	_____ ft.	_____ ft.	_____ sq. ft.
10.	_____ in.	12 in.	_____ in.	_____ sq. in.
11.	2.4 yd.	_____ yd.	_____ yd.	_____ sq. yd.
12.	_____ ft.	20 ft.	_____ ft.	_____ sq. ft.
13.	5.4 in.	_____ in.	_____ in.	_____ sq. in.

Check your answers. Record your score. Perfect score: 27 My score: _____

Volume

Complete the table for each rectangular solid described below.

	length	*width*	*height*	*volume*
1.	4 ft.	3 ft.	2 ft.	_____ cu. ft.
2.	6 in.	2 in.	$2\frac{1}{2}$ in.	_____ cu. in.
3.	8 yd.	$2\frac{1}{3}$ yd.	$\frac{1}{4}$ yd.	_____ cu. yd.

Complete the table for each cylinder described below. Use $3\frac{1}{7}$ for π.

	diameter	*radius*	*height*	*volume*
4.	_____ in.	21 in.	15 in.	_____ cu. in.
5.	7 ft.	_____ ft.	8 ft.	_____ cu. ft.
6.	_____ yd.	1 yd.	2 yd.	_____ cu. yd.

Complete the table for each cone described below. Use 3.14 for π.

	diameter	*radius*	*height*	*volume*
7.	_____ ft.	4 ft.	9 ft.	_____ cu. ft.
8.	10 in.	_____ in.	6 in.	_____ cu. in.
9.	_____ yd.	$1\frac{1}{2}$ yd.	12 yd.	_____ cu. yd.

Complete the table for each pyramid described below.

	Base			
	length	*width*	*height*	*volume*
10.	7 ft.	7 ft.	7 ft.	_____ cu. ft.
11.	19 yd.	15 yd.	20 yd.	_____ cu. yd.
12.	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	$2\frac{1}{2}$ in.	_____ cu. in.

Check your answers. Record your score. Perfect score: 18 My score: _____

NAME _____

Problems

Solve each problem. Use $3\frac{1}{7}$ for π.

1. A rectangular lot is 54 feet wide and 128 feet long. What is the perimeter of the lot? What is the area of the lot?

The perimeter is _____ feet.

The area is _____ square feet.

1.

2. The base of a triangle is 12 inches long. The height is 9 inches. What is the area of the triangle?

The area is _____ square inches.

2.

3. The radius of a circle is 14 inches. What is the area of the circle? (Use $3\frac{1}{7}$ for π.)

The area is _____ square inches.

3.

4. A crate is $7\frac{1}{2}$ feet long, 4 feet wide, and $3\frac{1}{4}$ feet high. What is the volume of the crate?

The volume is _____ cubic feet.

4.

5. A cylindrical can has a 4-inch diameter. What is the volume of the can? (Use 3.14 for π.)

The volume is _____ cubic inches.

5.

6. The base of a cone has a 1-inch radius. The cone has a height of 3 inches. What is its volume? (Use 3.14 for π.)

The volume is _____ cubic inches.

6.

7. A pyramid has a square base that is 24 feet along each side. The pyramid is 20 feet high. What is the volume of the pyramid?

The volume is _____ cubic feet.

7.

8. Suppose the pyramid in problem 7 had a rectangular base that is 30 feet long and 20 feet wide. What is the volume of the pyramid?

Its volume is _____ cubic feet.

8.

Check your answers. Record your score. Perfect score: 9 My score: _____

TEST—Review

Complete the following as indicated.

	a	*b*	*c*	*d*
1.	$42.6 - 5.134$	$3126 + 421 + 1538 + 6020$	$7\frac{1}{5} - 2\frac{1}{2}$	$3\frac{1}{8} + 2\frac{3}{8} + \frac{7}{8}$
2.	5216×45	$.08 \overline{)2.528}$	$1\frac{5}{9} \times \frac{3}{7}$	$\frac{5}{9} \div 3\frac{1}{3}$

Complete the following.

	a	*b*
3.	_____ is 15% of 140.	_____ is $5\frac{1}{2}$% of 82.
4.	22.5 is _____% of 250.	720 is 45% of _____.

Complete the table for each circle described below. Use 3.14 for π.

	diameter	*radius*	*circumference*	*area*
5.	6 in.	_____ in.	_____ in.	_____ sq. in.
6.	_____ ft.	8 ft.	_____ ft.	_____ sq. ft.

Complete the table for each rectangular solid described below.

	length	*width*	*height*	*volume*
7.	19 in.	12 in.	10 in.	_____ cu. in.
8.	30 ft.	30 ft.	$8\frac{1}{2}$ ft.	_____ cu. ft.

Check your answers. Record your score. Perfect score: 20 My score: _____

Answers for SPECTRUM MATHEMATICS (Blue Book)

Page 1

1. 768
2. 3600
3. 29
4. 3100
5. 845

Page 2

	a	*b*	*c*	*d*	*e*
1.	84	792	2028	20506	92607
2.	34	471	446	4333	36125
3.	134	1570	4984	11800	
4.	18272	283122	50244	328130	
5.	24 r1	98 r1	8 r29	16 r3	
6.	524 r2	8051	127 r65	236 r24	

Page 3

	a	*b*	*c*	*d*	*e*
1.	39	469	5459	18373	42546
2.	69	885	3978	44556	186979
3.	72	916	8785	66594	56293
4.	218	1767	9287	77598	86810
5.	226	2101	23836	86777	245948

Page 4

1. 449
2. 496
3. 7473
4. 27940
5. 14001
6. 71764
7. 381732

Page 5

	a	*b*	*c*	*d*	*e*
1.	53	433	598	4759	53471
2.	59	548	588	1546	38038
3.	12	251	509	3149	41381
4.	57	589	4111	2521	53517
5.	432	728	6539	4801	56262
6.	667	216	4681	5138	50469

Page 6

1. 126
2. 186
3. 297
4. 418
5. 2025
6. 2570
7. 11775

Page 7

	a	*b*	*c*
1.	121	2747	62541
2.	648	3518	86646
3.	254	7993	55209
4.	910	4468	130236
5.	179	11159	15798

Page 8

1. 870
2. 13
3. 2173
4. 2605
5. 22277
6. 4034
7. 112554

Page 9

	a	*b*	*c*	*d*	*e*
1.	49	599	5753	25788	99975
2.	52	622	8331	62411	44511
3.	91	767	7884	88977	47583
4.	46	747	3528	53707	26567
5.	159	918	7776	78981	98922
6.	38	338	2174	62461	43496
7.	279	1986	17880	85483	203293
8.	43	217	1758	48729	48669

Page 10

1. 58
2. 148
3. 917
4. 2211
5. 263
6. 4511
7. 49757

Page 11

	a	*b*	*c*	*d*
1.	306	684	2445	9363
2.	1425	7176	37968	50556
3.	6816	45368	297500	665199
4.	174870	274050	355950	2901465

Page 12

1. 325
2. 819
3. 1024
4. 7200
5. 4000
6. 52800
7. 16875
8. 224640

Page 13

	a	*b*	*c*
1.	50	60	50
2.	70	40	80
3.	380	430	680
4.	400	700	500
5.	700	1000	800
6.	4800	7600	8300
7.	5000	8000	10000
8.	6000	6000	8000
9.	4000	4000	7000

Page 14

	a		*b*	
1.	5952	6000	5544	5400
2.	1820	2000	2405	2400
3.	48804	50000	65682	64000
4.	121788	120000	199888	200000

	c	
1.	7371	7200
2.	3375	3200
3.	26104	25000
4.	184525	180000

Page 15

	a	*b*	*c*	*d*	*e*
1.	9 r6	16	27	156 r4	135
2.	6	8 r5	13 r30	12 r33	20 r27
3.	7 r69	15 r10	12 r63	4 r94	11 r20

Page 16

1. 11; 4
2. 28
3. 24
4. 95; 4
5. 31; 20
6. 24

Page 17

	a	*b*	*c*	*d*
1.	161 r8	412	39 r9	72
2.	1437	1069 r4	112 r48	201 r1
3.	5747	12071 r6	289 r27	2030

Page 18

1. 1074
2. 2073
3. 1554; 6
4. 44
5. 144; 9
6. 225

Page 19

	a	*b*	*c*
1.	64 r2	7 r47	56
2.	267 r5	68 r2	310 r6
3.	6865 r1	942	1283 r16

Page 20

1. 320
2. 15; 10
3. 308
4. 56
5. 2012; 3
6. 503; 3

Page 21

	a	*b*	*c*	*d*
1.	576	3800	3370	29250
2.	3591	22402	49875	439056
3.	127185	67983	1650384	775296
4.	8 r2	12 r72	57	80 r12
5.	136 r18	898 r2	922 r16	1858 r8

Page 22

1. 438
2. 13
3. 213408
4. 147
5. 37800
6. 2863; 13
7. 457345

Page 23

	a	*b*	*c*	*d*	*e*
1.	79	1097	7015	10745	97989
2.	25	68	2385	54206	54947
3.	342	2085	21024	178038	2383094
4.	9 r2	158 r7	22 r3	901	2150 r2

Page 24

	a	*b*	*c*	*d*
1.	$\frac{8}{15}$	$\frac{7}{10}$	$\frac{3}{4}$	$\frac{1}{3}$
2.	$28\frac{1}{2}$	4	$5\frac{13}{24}$	$8\frac{2}{5}$
3.	$1\frac{1}{3}$	$\frac{3}{4}$	8	$4\frac{2}{15}$
4.	$\frac{7}{10}$	$\frac{3}{4}$	$7\frac{29}{30}$	$11\frac{7}{40}$
5.	$\frac{2}{9}$	$\frac{2}{15}$	$3\frac{1}{2}$	$2\frac{23}{30}$

Page 25

	a	*b*	*c*	*d*
1.	$\frac{3}{20}$	$\frac{8}{15}$	$\frac{35}{96}$	$\frac{6}{175}$
2.	$\frac{1}{6}$	$\frac{8}{35}$	$\frac{27}{160}$	$\frac{1}{24}$
3.	$\frac{25}{64}$	$\frac{18}{35}$	$\frac{2}{105}$	$\frac{9}{140}$
4.	$\frac{15}{56}$	$\frac{15}{56}$	$\frac{64}{125}$	$\frac{8}{27}$
5.	$\frac{6}{25}$	$\frac{21}{80}$	$\frac{25}{108}$	$\frac{24}{125}$
6.	$\frac{3}{10}$	$\frac{35}{72}$	$\frac{45}{224}$	$\frac{8}{105}$

Page 26

1.	1,2,4 1,2,3,6	1,2	2
2.	1,2,5,10 1,2,3,4,6,12	1,2	2
3.	1,2,4,8,16 1,2,3,4,6,8,12,24	1,2,4,8	8
4.	1,3,9 1,2,4,8,16	1	1
5.	1,2,3,6,9,18 1,2,4,5,10,20	1,2	2
6.	1,5,25 1,2,3,4,6,8,12,24	1	1
7.	1,2,3,4,6,8,12,16,24,48 1,2,3,4,6,9,12,18,36	1,2,3,4,6,12	12

Page 27

	a	*b*	*c*		*a*	*b*	*c*
1.	$\frac{2}{5}$	$\frac{3}{5}$	$\frac{7}{10}$	4.	$\frac{2}{7}$	$3\frac{2}{9}$	$7\frac{3}{4}$
2.	$\frac{4}{9}$	$\frac{20}{21}$	$\frac{1}{2}$	5.	$5\frac{2}{5}$	$\frac{2}{7}$	$\frac{3}{5}$
3.	$2\frac{3}{5}$	$6\frac{3}{5}$	$8\frac{2}{3}$				

Page 28

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$\frac{2}{5}$	$\frac{1}{4}$	$\frac{4}{15}$	$\frac{28}{45}$	4.	$\frac{1}{4}$	$\frac{3}{32}$	$\frac{4}{9}$	$\frac{8}{15}$
2.	$\frac{5}{9}$	$\frac{28}{45}$	$\frac{35}{66}$	$\frac{3}{14}$	5.	$\frac{3}{10}$	$\frac{16}{21}$	$\frac{10}{21}$	$\frac{16}{65}$
3.	$\frac{14}{33}$	$\frac{9}{13}$	$\frac{14}{33}$	$\frac{10}{27}$					

Page 29

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{3}{4}$	$\frac{1}{10}$	4.	$\frac{2}{5}$	$\frac{3}{5}$	$\frac{1}{4}$	$\frac{1}{4}$
2.	$\frac{3}{4}$	$\frac{1}{6}$	$\frac{5}{6}$	$\frac{1}{2}$	5.	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{3}$
3.	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{3}$					

Page 30

	a	*b*	*c*	*d*
1.	$\frac{50}{10}$	$\frac{48}{12}$	$\frac{16}{8}$	$\frac{7}{3}$
2.	$\frac{12}{15}$	$\frac{6}{16}$	$\frac{5}{10}$	$\frac{7}{2}$
3.	$\frac{21}{7}$	$\frac{15}{20}$	$\frac{98}{14}$	$\frac{23}{4}$

Page 31

	a	*b*	*c*		*a*	*b*	*c*
1.	$22\frac{2}{3}$	42	57	3.	$\frac{5}{12}$	$\frac{15}{16}$	7
2.	2	3	$2\frac{1}{2}$	4.	4	$1\frac{1}{2}$	$\frac{1}{2}$

Page 32

1.	$7\frac{1}{2}$	3.	$9\frac{7}{20}$	5.	$38\frac{1}{4}$	7. 276
2.	$\frac{1}{2}$	4. 22		6. 70		8. $13\frac{14}{15}$

Page 33

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$1\frac{1}{2}$	$\frac{2}{3}$	$1\frac{1}{2}$	$1\frac{13}{15}$	3.	$3\frac{3}{5}$	6	$3\frac{3}{4}$	$4\frac{1}{2}$
2.	20	$6\frac{3}{4}$	$26\frac{2}{5}$	40					

Page 34

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$1\frac{1}{6}$	$\frac{3}{10}$	$\frac{5}{6}$	$4\frac{1}{2}$	3.	$3\frac{1}{3}$	6	$\frac{3}{4}$	$\frac{1}{15}$
2.	$3\frac{3}{8}$	$2\frac{7}{9}$	$\frac{3}{4}$	6	4.	$\frac{1}{2}$	$4\frac{5}{7}$	$3\frac{1}{3}$	$\frac{2}{3}$

Page 35

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$1\frac{3}{4}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{2}{3}$	4.	$\frac{7}{15}$	$1\frac{7}{20}$	2	$\frac{2}{5}$
2.	10	12	$\frac{2}{15}$	$\frac{1}{9}$	5.	$2\frac{2}{3}$	$1\frac{1}{2}$	$\frac{17}{32}$	$2\frac{2}{3}$
3.	$1\frac{2}{5}$	$\frac{4}{5}$	$1\frac{4}{45}$	$\frac{18}{25}$					

Page 36

1.	$1\frac{1}{9}$	3. $\frac{1}{9}$	5. $1\frac{1}{95}$	7.	$1\frac{3}{4}$
2.	$\frac{9}{10}$	4. 5; $\frac{1}{3}$	6. $\frac{92}{93}$		

Page 37

	a	*b*	*c*	*d*	*e*	*f*
1.	$\frac{4}{5}$	$1\frac{5}{8}$	$1\frac{1}{2}$	$1\frac{3}{10}$	$1\frac{2}{7}$	$1\frac{1}{4}$
2.	$\frac{5}{8}$	$1\frac{5}{6}$	$1\frac{1}{3}$	$1\frac{4}{5}$	$1\frac{4}{5}$	$1\frac{1}{4}$
3.	$\frac{1}{7}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{8}$	$\frac{1}{6}$
4.	$\frac{5}{12}$	$\frac{4}{5}$	$\frac{1}{2}$	$\frac{7}{15}$	$\frac{2}{5}$	$\frac{1}{2}$

Page 38

1.	$1\frac{1}{5}$	3. $1\frac{1}{8}$	5. $\frac{1}{4}$	7.	$\frac{1}{2}$
2.	$\frac{3}{5}$	4. $\frac{1}{2}$	6. $\frac{1}{6}$	8.	$1\frac{7}{12}$

Page 39

	a	*b*	*c*
1.	P	3×7	3×3×3
2.	2×2×2×2×2	5×7	3×13
3.	P	2×2×2×2×3	7×7
4.	2×5×5	3×17	2×2×13
5.	3×23	3×5×5	2×2×2×11

Page 40

	a	*b*	*c*		*a*	*b*	*c*
1.	24	10	120	4.	112	72	90
2.	84	36	60	5.	126	72	156
3.	24	35	120	6.	180	24	360

Page 41

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$1\frac{4}{15}$	$1\frac{5}{8}$	$\frac{13}{24}$	$\frac{31}{36}$	3.	$1\frac{11}{12}$	$1\frac{13}{20}$	$1\frac{91}{120}$	$1\frac{41}{60}$
2.	$\frac{1}{10}$	$\frac{2}{5}$	$\frac{7}{15}$	$\frac{21}{40}$	4.	$\frac{7}{18}$	$\frac{13}{30}$	$\frac{1}{8}$	$\frac{91}{144}$

Page 42

1.	$1\frac{1}{3}$	3. $2\frac{7}{30}$	5. red; $\frac{1}{8}$	7.	$1\frac{1}{20}$
2.	Wednesday; $\frac{1}{15}$	4. $2\frac{1}{8}$	6. Brenda; $\frac{49}{60}$		

Page 43

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.	$5\frac{7}{15}$	$9\frac{1}{8}$	$10\frac{19}{90}$	$9\frac{29}{30}$	3.	$2\frac{3}{8}$	$1\frac{3}{4}$	$3\frac{29}{40}$	$6\frac{3}{10}$
2.	$6\frac{1}{8}$	$8\frac{7}{10}$	$3\frac{7}{12}$	$\frac{1}{7}$	4.	$7\frac{55}{56}$	$1\frac{1}{4}$	$3\frac{4}{9}$	$10\frac{3}{8}$

Answers for SPECTRUM MATHEMATICS (Blue Book)

Page 44

1. $3\frac{5}{6}$ 2. $2\frac{7}{12}$ 3. $1\frac{1}{4}$ 4. B; $1\frac{1}{12}$ 5. $4\frac{7}{12}$ 6. $\frac{59}{60}$

Page 45

	a	*b*	*c*	*d*
1.	$\frac{4}{9}$	$\frac{3}{4}$	$\frac{4}{15}$	$\frac{1}{4}$
2.	90	6	$6\frac{26}{99}$	34
3.	$\frac{24}{25}$	$2\frac{11}{12}$	$10\frac{2}{3}$	4
4.	$\frac{4}{5}$	$1\frac{4}{9}$	$10\frac{7}{12}$	$4\frac{3}{5}$
5.	$\frac{3}{5}$	$\frac{27}{56}$	$4\frac{3}{4}$	$1\frac{7}{10}$

Page 46

	a	*b*	*c*	*d*	*e*
1.	9.5	2.109	48.49	4.949	24.831
2.	.49	38.91	5.133	40.413	31.76
3.	2.837	19.303	91.819	43.36	66.661
4.	3.48	1.46	.00392	.924	
5.	1.9	.0038	315	5.4	
6.	22.1292	3.02736	.37	370	

Page 47

	a	*b*	*c*
1.	.2	.8	.5
2.	4.2	7.8	12.5
3.	18.6	19.5	124.4
4.	.75	.70	.45
5.	8.75	29.70	42.45
6.	12.50	142.36	513.60
7.	.018	.068	.595
8.	3.018	17.068	12.595
9.	18.950	6.490	124.325

Page 48

	a	*b*	*c*		*a*	*b*	*c*
1.	$\frac{7}{10}$	$\frac{9}{10}$	$\frac{3}{10}$	8.	$\frac{9}{40}$	$\frac{1}{20}$	$\frac{77}{250}$
2.	$\frac{3}{5}$	$\frac{2}{5}$	$\frac{4}{5}$	9.	$2\frac{1}{250}$	$16\frac{117}{1000}$	$5\frac{111}{200}$
3.	$2\frac{1}{10}$	$13\frac{1}{5}$	$6\frac{1}{2}$	10.	$\frac{3}{4}$	$\frac{109}{1000}$	$2\frac{1}{2}$
4.	$\frac{21}{100}$	$\frac{9}{100}$	$\frac{87}{100}$	11.	$7\frac{3}{50}$	$19\frac{3}{100}$	$38\frac{3}{10}$
5.	$\frac{3}{25}$	$\frac{1}{50}$	$1\frac{3}{4}$	12.	$4\frac{4}{5}$	$6\frac{3}{20}$	$16\frac{1}{5}$
6.	$8\frac{1}{4}$	$17\frac{4}{5}$	$48\frac{7}{100}$	13.	$\frac{2}{25}$	$\frac{13}{40}$	$6\frac{19}{25}$
7.	$\frac{213}{1000}$	$\frac{9}{500}$	$\frac{3}{1000}$				

Page 49

	a	*b*	*c*	*d*	*e*
1.	.8	1.1	7.5	13.4	13.2
2.	.86	.43	$.85	$7.39	$44.13
3.	.195	.419	.605	10.116	127.343
4.	1.75	.687	8.035	22.264	97.978
5.	.908	.667	24.95	3.269	44.833
6.	1.166	2.116	14.047	18.545	52.338

Page 50

1. 1.4 3. 57917.7 5. 360.8 7. 364.408
2. .051 4. 6.52 6. 3.608 8. Mable

Page 51

	a	*b*	*c*	*d*	*e*
1.	.6	.29	.093	2.049	38.531
2.	.594	1.39	$.58	1.379	$296.42
3.	.15	.136	3.86	8.293	528.42
4.	.086	.97	30.95	12.69	32.078
5.	4.4	6.89	6.583	41.784	63.725
6.	.216	6.762	3.327	34.192	35.575
7.	.082	1.837	5.942	6.712	2.074

Page 52

1. 2.9 3. 5.75 5. 388.8 7. 431.568
2. .68 4. .405 6. 3.888 8. 2.86

Page 53

1. 16.987 5. 18.798 9. 43.403
2. 3.88 6. 15.165 10. 3.82
3. 15.958 7. 25.902 11. 6.597
4. 1.708 8. 3.313 12. 9.93

Page 54

1. 1.418 3. .576 5. 3.461
2. 1.467 4. .603 6. more; .581

Page 55

	a	*b*	*c*	*d*	*e*
1.	1.38	.80	6.4	1.620	301.7
2.	9.6	33.6	1.02	.6606	1.296
3.	.0092	.0085	.075	.1418	.03452
4.	.00252	.0304	.00304	.2048	.02418
5.	9.48	1.428	.6435	1.272	.3095
6.	1.263	4.904	.2772	.0418	1.248
7.	16.20	20.61	.3762	253.6	2.468

Page 56

1. 75.06 4. 138.75 7. 25.6036
2. 6.48 5. 13.875 8. 3.69
3. 89.772 6. 25603.6 9. 3.276

Page 57

	a	*b*	*c*	*d*	*e*
1.	.925	15.998	822.64	52.272	1.35141
2.	12.04	150.66	1.5662	1.31016	.35392
3.	.0496	1.7544	5.4730	4.3428	1.26072
4.	77.28	1.3338	13.5880	21.420	485.611
5.	2.700	14.688	130.400	.13472	26.3466
6.	7.968	134.16	.08878	.5832	7.26264

Page 58

1. 361.25 4. 3193.5 7. 6.188; 6.188
2. .06 5. .005760 8. 1234.475
3. 96.72 6. .3565

Page 59

	a	*b*	*c*	*d*
1.	.16	1.8	12.4	.318
2.	.09	.008	.023	.0027
3.	.004	.004	.008	.0018
4.	.018	.017	.028	.0014

Page 60

1. .42 3. 1.7 5. .37 7. .029
2. 94.2 4. .012 6. .94

Page 61

	a	*b*	*c*	*d*
1.	12	.94	3.6	.034
2.	180	1400	11500	7000
3.	20	120	15000	23

Page 62

1. 2.3; .6 3. .4 5. No; 1.73 7. .02
2. 4; .3 4. 2.5 6. 50

Page 63

	a	*b*	*c*	*d*
1.	1.8	270	840	140
2.	1070	13	.025	15
3.	27	1.3	5600	350
4.	27	18	430	550
5.	340	120	1.9	1500

Page 64

1. .12	3. .01	5. 3.2	7. 7.6; 760
2. 100	4. 16.5	6. 1.25	8. .43

Page 65

1. 136	5. 743.49	9. 6.3	13. 410
2. 2.32	6. 427.653	10. .0224	14. .54119
3. 34.98	7. .694	11. 127	
4. 2.95	8. 144.6	12. 17.7241	

Page 66

1. .706	4. 12.074	7. 7.35
2. 17.85	5. .13	8. .42
3. 175	6. 3.385	9. Ty Cobb; .025

Page 67

	a	*b*	*c*	*d*
1.	2.30	21.733	114.11	17.872
2.	17.729	3.37	2.42	25.711
3.	8.65	.204	.0648	1.12
4.	1.4	.0142	.313	4200
5.	1.43242	609.444	4.7	.41

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	a	*b*	*c*
2.	2 to 10	2:10	$\frac{2}{10}$
3.	8 to 2	8:2	$\frac{8}{2}$
4.	3 to 5	3:5	$\frac{3}{5}$

	a	*b*		*a*	*b*
5.	$\frac{5}{8}, \frac{15}{24}$	$\frac{7}{12}, \frac{11}{18}$	8.	$n=27$	$n=16$
6.	$\frac{3}{4}, \frac{16}{20}$	$\frac{2}{3}, \frac{32}{48}$	9.	$n=7$	$n=6$
7.	$\frac{4}{5}, \frac{24}{30}$	$\frac{5}{6}, \frac{20}{24}$	10.	$n=60$	$n=5$

Page 69

	a	*b*	*c*		*a*	*b*	*c*
2.	9 to 2	9:2	$\frac{9}{2}$	7.	6 to 2	6:2	$\frac{6}{2}$
3.	3 to 6	3:6	$\frac{3}{6}$	8.	6 to 30	6:30	$\frac{6}{30}$
4.	8 to 9	8:9	$\frac{8}{9}$	9.	3 to 1	3:1	$\frac{3}{1}$
5.	3 to 60	3:60	$\frac{3}{60}$	10.	4 to 3	4:3	$\frac{4}{3}$
6.	15 to 5	15:5	$\frac{15}{5}$				

Page 70

	a	*b*		*a*	*b*
1.	$\frac{2}{3}, \frac{6}{9}$	$\frac{7}{8}, \frac{13}{16}$	6.	$\frac{5}{6}, \frac{9}{12}$	$\frac{6}{16}, \frac{3}{8}$
2.	$\frac{5}{16}, \frac{11}{32}$	$\frac{4}{5}, \frac{8}{10}$	7.	$\frac{16}{20}, \frac{9}{10}$	$\frac{15}{24}, \frac{5}{8}$
3.	$\frac{5}{8}, \frac{10}{16}$	$\frac{3}{4}, \frac{16}{20}$	8.	$\frac{10}{12}, \frac{4}{5}$	$\frac{12}{16}, \frac{3}{4}$
4.	$\frac{1}{6}, \frac{2}{12}$	$\frac{3}{7}, \frac{9}{14}$	9.	$\frac{7}{25}, \frac{28}{100}$	$\frac{9}{20}, \frac{48}{100}$
5.	$\frac{3}{9}, \frac{1}{3}$	$\frac{3}{2}, \frac{18}{12}$	10.	$\frac{5}{16}, \frac{4}{12}$	$\frac{7}{8}, \frac{21}{24}$

Page 71

	a	*b*	*c*		*a*	*b*	*c*
1.	$n=16$	$n=48$	$n=36$	3.	$n=45$	$n=3$	$n=4$
2.	$n=3$	$n=8$	$n=100$	4.	$n=8$	$n=3$	$n=70$

Page 72

1. 24	3. 300	5. 65	7. 5
2. 2	4. 175	6. 147	

Page 73

	a	*b*	*c*		*a*	*b*	*c*
1.	$n=16$	$n=21$	$n=25$	3.	$n=4$	$n=16$	$n=6$
2.	$n=7$	$n=75$	$n=12$	4.	$n=72$	$n=875$	$n=49$

Page 74

1. 98	2. 98	3. 49	4. 76	5. 12	6. 75

Page 75

1. 600	2. 100	3. 6	4. 300

Page 76

1. 3	3. 300	5. 1800	7. 9
2. 2	4. 70	6. 44	

Page 77

	a	*b*	*c*		*a*	*b*	*c*
1.	$n=1$	$n=4$	$n=5$	5.	$n=80$	$n=33$	$n=12$
2.	$n=24$	$n=6$	$n=13$	6.	$n=35$	$n=15$	$n=32$
3.	$n=6$	$n=12$	$n=26$	7.	$n=6$	$n=24$	$n=60$
4.	$n=96$	$n=20$	$n=7$				

Page 78

1. 58	4. 16	7. 21
2. 57	5. 24	8. 20
3. 375	6. 21	

	a	*b*	*c*
2.	5 to 2	5:2	$\frac{5}{2}$
3.	17 to 200	17:200	$\frac{17}{200}$
4.	4 to 7	4:7	$\frac{4}{7}$
5.	$n=32$	$n=14$	$n=4$
6.	$n=12$	$n=32$	$n=750$
7.	$n=27$	$n=20$	$n=72$
8.	30	9. 15	

Page 80

	a	*b*		*a*	*b*
1.	70	$66\frac{2}{3}$	7.	.1876	.07125
2.	90	14	8.	.0775	.0925
3.	130	243	9.	$\frac{27}{100}$	$\frac{7}{20}$
4.	72.5	167.2	10.	$1\frac{17}{100}$	$2\frac{4}{5}$
5.	.07	.69	11.	$\frac{27}{50}$	$1\frac{3}{4}$
6.	.125	.0325	12.	$\frac{1}{3}$	$\frac{7}{8}$

Page 81

	a	*b*		*a*	*b*		*a*	*b*
1.	$\frac{1}{100}$	.01	6.	$\frac{143}{100}$	1.43	11.	$\frac{233}{100}$	2.33
2.	$\frac{21}{100}$	.21	7.	$\frac{9}{100}$	.09	12.	$\frac{83}{100}$	.83
3.	$\frac{129}{100}$	1.29	8.	$\frac{51}{100}$	.51	13.	$\frac{357}{100}$	3.57
4.	$\frac{3}{100}$	.03	9.	$\frac{169}{100}$	1.69	14.	$\frac{99}{100}$	.99
5.	$\frac{39}{100}$	.39	10.	$\frac{69}{100}$	.69			

Page 82

	a	*b*		*a*	*b*
1.	50	25	5.	30	$87\frac{1}{2}$
2.	$33\frac{1}{3}$	$12\frac{1}{2}$	6.	$62\frac{1}{2}$	$41\frac{2}{3}$
3.	20	$37\frac{1}{2}$	7.	$31\frac{1}{4}$	70
4.	$8\frac{1}{3}$	35	8.	$18\frac{3}{4}$	$91\frac{2}{3}$

Page 83

	a	*b*		*a*	*b*		*a*	*b*
1.	$\frac{1}{4}$	$\frac{7}{10}$	5.	$1\frac{4}{5}$	$2\frac{3}{10}$	9.	$\frac{9}{16}$	$1\frac{7}{12}$
2.	$\frac{19}{20}$	$\frac{18}{25}$	6.	$\frac{1}{5}$	$\frac{14}{25}$	10.	$\frac{5}{16}$	$\frac{11}{12}$
3.	$\frac{9}{20}$	$1\frac{3}{5}$	7.	$\frac{3}{8}$	$\frac{5}{6}$	11.	$\frac{1}{3}$	$\frac{7}{8}$
4.	$1\frac{1}{2}$	$2\frac{3}{4}$	8.	$1\frac{1}{6}$	$\frac{5}{8}$			

Page 84

	a	*b*		*a*	*b*		*a*	*b*
1.	60	$62\frac{1}{2}$	5.	$\frac{3}{4}$	$3\frac{1}{4}$	9.	$\frac{5}{12}$	$\frac{2}{3}$
2.	$87\frac{1}{2}$	$41\frac{2}{3}$	6.	$2\frac{1}{2}$	$\frac{7}{25}$	10.	$\frac{1}{12}$	$\frac{1}{16}$
3.	16	34	7.	$\frac{39}{50}$	$1\frac{2}{5}$	11.	$\frac{1}{8}$	$\frac{3}{16}$
4.	$58\frac{1}{3}$	55	8.	$\frac{1}{6}$	$\frac{5}{8}$	12.	$\frac{1}{25}$	$1\frac{1}{20}$

Page 85

	a	*b*	*c*
1.	70	90	50
2.	130	260	190
3.	3	84	35
4.	106	187	245
5.	1.5	22.5	37.5
6.	103.2	212.5	147.7
7.	8.25	18.75	68.25
8.	100.24	132.15	200.01
9.	10	39.6	17
10.	129.6	239	230

Page 86

	a	*b*	*c*
1.	.085	.123	.359
2.	.074	.166	.297
3.	.7225	.0975	.0833
4.	.9944	1.5625	2.1875
5.	.07125	.06625	.09875
6.	.16425	.93753	.48775
7.	.096	.0625	.08475
8.	.1754	.67125	.195

Page 87

	a	*b*	*c*
1.	.085	.0775	.064
2.	.0525	.125	.081
3.	.1875	.0625	.078
4.	.375	.0975	.052
5.	.0825	.875	.096
6.	.6875	.073	.075
7.	.084	.1625	.097
8.	.065	.9375	.082
9.	.374	.035	.3125
10.	.839	.426	.2175
11.	.0214	.1225	.014

Page 88

1.	50%	.074	9.	.7%	.055
2.	170%	.168	10.	141.4%	.0725
3.	280%	1.375	11.	8.75%	.0475
4.	9%	.0749	12.	.95%	.9375
5.	67%	.8667	13.	106.55%	.625
6.	115%	2.0986	14.	.09%	.354
7.	7.5%	.07125	15.	31.25%	.093
8.	37.5%	.0375			

Page 89

1. $33\frac{1}{3}$ 2. $\frac{13}{20}$ 3. $\frac{3}{8}$ 4. .467 5. 97.9 6. 30

Page 90

	a	*b*
1.	$\frac{1}{20}$	.08
2.	10%	9%
3.	$\frac{3}{25}$	.12
4.	$12\frac{1}{2}$%	27%
5.	$\frac{1}{6}$	.075
6.	20%	16.8%
7.	$\frac{1}{4}$	1.25
8.	$33\frac{1}{3}$%	135%
9.	$\frac{3}{8}$	.065
10.	40%	27.48%
11.	$\frac{1}{2}$	2.065
12.	60%	137.5%
13.	$\frac{5}{8}$	.0825
14.	$66\frac{2}{3}$%	6.75%
15.	$\frac{5}{6}$	.0775

Page 91

1.	$\frac{9}{100}$	.09	3. $\frac{79}{100}$	.79
2.	$\frac{47}{100}$	.47	4. $\frac{153}{100}$	1.53

	a	*b*	*c*
5.	30	62.5	80
6.	120	32.5	31.75
7.	.6225	1.265	.0875
8.	$\frac{17}{20}$	$1\frac{3}{5}$	$\frac{1}{6}$

Page 92

	a	*b*
1.	32	70
2.	$11\frac{1}{2}$	$15\frac{3}{4}$
3.	100	150
4.	59.2	67.2
5.	25	$62\frac{1}{2}$
6.	$83\frac{1}{3}$	120
7.	25	50
8.	$31\frac{1}{4}$	20
9.	70	140
10.	140	300
11.	100	$62\frac{1}{2}$
12.	.5	$133\frac{1}{3}$

Page 93

	a	*b*
1.	42	4.41
2.	43.93	630
3.	80	360
4.	63.7	151.2
5.	32	105
6.	27.645	65.7
7.	$7\frac{1}{2}$	31
8.	48	$14\frac{2}{5}$
9.	27	342
10.	$28\frac{7}{50}$	$25\frac{1}{5}$

Page 94

1. 12	3. 420	5. 60	7. 108
2. 240	4. 56	6. 720	

Page 95

	a	*b*		*a*	*b*
1.	20	$37\frac{1}{2}$	5.	125	175
2.	80	80	6.	50	125
3.	$83\frac{1}{3}$	90	7.	125	$16\frac{2}{3}$
4.	50	75	8.	$33\frac{1}{3}$	$16\frac{2}{3}$

Page 96

1. 80	3. $66\frac{2}{3}$	5. $33\frac{1}{3}$	7. $62\frac{1}{2}$
2. 40	4. $82\frac{1}{2}$	6. 5	

Page 97

	a	*b*		*a*	*b*
1.	60	.2	6.	$\frac{5}{6}$	$\frac{2}{3}$
2.	$\frac{4}{5}$	200	7.	.625	5.12
3.	$16\frac{2}{3}$	75	8.	240	60
4.	5	83	9.	50	80
5.	3.2	7			

Page 98

1. 15	3. 210	5. 25	7. 15.60
2. 300	4. $1\frac{1}{4}$	6. 325	

Page 99

	a	*b*		*a*	*b*
1.	45	162.15	7.	$66\frac{2}{3}$	30
2.	64	$37\frac{1}{2}$	8.	50	75
3.	45	102.4	9.	400	325
4.	935	225	10.	240	68
5.	40	120	11.	$1\frac{1}{4}$	$\frac{3}{4}$
6.	100	110	12.	7.2	6.25

Page 100

1. 640	3. $33\frac{1}{3}$	5. 2880
2. 780	4. 220	

Page 101

	a	*b*
1.	180	507
2.	80	240
3.	$39\frac{1}{5}$ or 39.2	$7\frac{17}{25}$ or 7.68
4.	23	612
5.	25	75
6.	250	100
7.	6	9
8.	20	$33\frac{1}{3}$
9.	140	60
10.	100	780
11.	$\frac{2}{3}$	4.375
12.	$\frac{5}{9}$	30.6

Page 102

1. 3	3. 25	5. $83\frac{1}{3}$	7. $83\frac{1}{3}$
2. 75	4. 50	6. 125	8. 60

Page 103

	a	*b*
1.	27	200
2.	75	$3\frac{3}{20}$ or 3.15
3.	40	120
4.	$22\frac{3}{4}$ or 22.75	900
5.	$43\frac{3}{4}$	16
6.	50	95
7.	45	90
8.	20	32
9.	1480	50
10.	646	968
11.	$66\frac{2}{3}$	135
12.	140	$37\frac{1}{2}$

Page 104

1. 39	3. 36	5. $87\frac{1}{2}$	7. 60
2. 35	4. 40	6. 240	

Page 105

	a	*b*		*a*	*b*
1.	80	50	6.	$56\frac{1}{4}$	300
2.	12	70	7.	123	25
3.	50	75	8.	$\frac{5}{6}$	135
4.	40	61.2	9.	150	2
5.	2	336	10.	62.56	$87\frac{1}{2}$

Page 106

1. $32	$432	
2. $39	$689	
3. $8.40	$128.40	
4. $80	$880	
5. $121.50	$571.50	
6. $22.50	10. $6	14. $360.75
7. $2\frac{1}{4}$ yrs.	11. $1\frac{1}{4}$ yrs.	15. $\frac{3}{4}$ yr.
8. 5%	12. $5\frac{1}{2}$%	
9. $60	13. $500	

Page 107

1. $10	5. $2.10	9. $2.14
2. $12	6. $3.12	10. $25.67
3. $20	7. $33.20	11. $5.16
4. $4.50	8. $55.50	12. $66.01

Page 108

1. $27	3. $1	5. $120	7. Al; $.50
2. $3.25	4. $47.25	6. $33.66	

Page 109

1. $70	4. $281.25	
2. $90	5. $364.21	
3. $29.40		
6. $52.50	$752.50	
7. $2.55	$87.55	
8. $2.76	$94.76	
9. $525	$2400	
10. $260.75	$1750.75	

Page 110

1. 112	3. 10.80	5. 1800
2. 26.70	4. 26.25; 776.25	6. Bill; .15

Page 111

1. $1	5. $12.60	9. $6
2. $2	6. $54	10. $47.50
3. $3	7. $2	
4. $1.20	8. $1.50	

Page 112

1. 7	3. 76; 1976	5. 3.70
2. 3.50	4. 2.25	6. 1620; 37620

Page 113

1. 5%	5. $162	9. $850
2. 4%	6. $89.25	10. 8%
3. $380	7. $650	
4. $825	8. 5%	

Page 114

1. 6%	3. 45; 8%	5. 7400; 8177
2. 550	4. 40,000	6. 4%; 5%

Page 115

1. 3	5. $2\frac{1}{2}$	9. $\frac{1}{2}$
2. $1\frac{1}{2}$	6. $\frac{1}{2}$	10. $39
3. $\frac{3}{4}$	7. $600	11. 5%
4. 2	8. $6\frac{1}{4}$%	

Page 116

1. 2	3. $1\frac{1}{2}$	5. $7\frac{1}{2}$%	7. $\frac{3}{4}$
2. 450	4. 15000	6. $\frac{2}{3}$	

Page 117

1. $20	$520	
2. $28	$428	
3. $72	$672	
4. $180	$930	
5. $52.50	$577.50	

	p	*r*	*t*	*i*
6.	$300			
7.		7%		
8.			$\frac{1}{2}$	
9.				$19.50
10.			$\frac{1}{3}$	
11.		$5\frac{1}{4}$%		
12.	$900			
13.		$8\frac{1}{2}$%		
14.			$2\frac{1}{2}$	
15.				$352

Page 118

2. $\overline{JL}$ or $\overline{LJ}$; $\overleftrightarrow{AB}$ or $\overleftrightarrow{BA}$; $\angle CDE$ or $\angle EDC$; $\overrightarrow{GF}$
3. isosceles equilateral scalene
4. R R,S,X X
5. Have your teacher check your work.

Page 119

	a	*b*
2.	SR or RS	$\overleftrightarrow{SR}$ or $\overleftrightarrow{RS}$
3.	YX or XY	$\overleftrightarrow{YX}$ or $\overleftrightarrow{XY}$
4.	PQ or QP	$\overleftrightarrow{PQ}$ or $\overleftrightarrow{QP}$

	a	*b*	*c*
6.	JK or KJ	$\overline{JK}$ or $\overline{KJ}$	J and K
7.	RS or SR	$\overline{RS}$ or $\overline{SR}$	R and S
8.	BG or GB	$\overline{BG}$ or $\overline{GB}$	B and G

Page 120

2.	QP	$\overrightarrow{QP}$	Q
3.	XY	$\overrightarrow{XY}$	X
4.	KJ	$\overrightarrow{KJ}$	K
6.	JKL or LKJ KJ and KL	$\angle JKL$ or $\angle LKJ$	
7.	PQR or RQP QP and QR	$\angle PQR$ or $\angle RQP$	

Page 121
Have your teacher check your work.

Page 122
Have your teacher check your work.

Page 123
Have your teacher check your work.

Page 124
Have your teacher check your work.

Page 125
2. intersecting; parallel
3. parallel; intersecting
4. 0 5. No 6. 1 7. Yes

Page 126
Have your teacher check your work.

Page 127

	a	*b*	*c*	*d*		*a*	*b*	*c*	*d*
1.		R		R	3.	P			P
2.	R		R						

Page 128
Have your teacher check your work.

Page 129

	a	*b*	*c*
1.	obtuse	right	acute
2.	acute	obtuse	right
3.	acute	right	obtuse

Page 130

	a	*b*	*c*
1.	right	obtuse	acute
2.	acute	right	obtuse
3.	obtuse	acute	right

Page 131

	a	*b*	*c*
1.	scalene	isosceles or equilateral	isosceles
2.	isosceles or equilateral	isosceles	scalene
3.	scalene	isosceles or equilateral	isosceles

Page 132

	a	*b*
1.	figures EFGH and PQRS	figure PQRS
2.	yes	no
3.	figures JKLM and PQRS	figure PQRS
4.	yes	no

Page 133
Have your teacher check your work.

Page 134
Have your teacher check your work.

Page 135

	a	*b*	*c*	
1.	right	obtuse	acute	4. a,b,c,d
2.	a			5. a,b
3.	a,c			6. a,b,c,d

7. Have your teacher check your work.

Page 136

	a	*b*	*c*		*a*	*b*	*c*
1.	30	20.8	176	4.	153.86	42	$56\frac{1}{4}$
2.	12	308	$16\frac{1}{4}$	5.	8.82	28.26	$10\frac{1}{2}$
3.	14	25.2	50.24				

Page 137

	a	*b*	*c*		
1.	20	12	12	4. 16	7. 28
2.	35	30	28	5. $19\frac{1}{2}$	
3.	26			6. 11	

Page 138

1. 542 3. 14 5. will not be; 2; short
2. 446 4. $10\frac{1}{4}$ 6. triangular board; .5

Page 139

	a	*b*	*c*	
1.	66	44	$31\frac{3}{7}$	5. $3\frac{1}{2}$; 21.98
2.	$16\frac{1}{2}$	$36\frac{2}{3}$	22	6. 17; 53.38
3.	4; 25.12			7. 4.7; 29.516
4.	6; 18.84			8. 14.4; 45.216

Page 140

1. 14; 44 3. $103\frac{5}{7}$ 5. 6.28
2. 14; 88 4. .5 or $\frac{1}{2}$; 3.14 6. square; 2.58

Page 141

1. 7; $3\frac{1}{2}$
2. 35; $17\frac{1}{2}$
3. 28; 14
4. $3\frac{1}{2}$; $1\frac{3}{4}$
5. $\frac{7}{11}$; $\frac{7}{22}$
6. $10\frac{1}{2}$; $5\frac{1}{4}$
7. 2; 1
8. 10; 5
9. 3; $1\frac{1}{2}$
10. 7; $3\frac{1}{2}$
11. 1; $\frac{1}{2}$
12. 4; 2

Page 142

1. 35; $17\frac{1}{2}$
2. $1\frac{5}{44}$; $2\frac{5}{22}$
3. 1; $\frac{1}{2}$
4. $1\frac{1}{2}$; 3
5. .5 or $\frac{1}{2}$; .25 or $\frac{1}{4}$
6. 2; 1

Page 143

	a	*b*	*c*
1.	32	64	153
2.	54		5. $5\frac{1}{16}$
3.	56.25		6. 16.25
4.	$15\frac{3}{4}$		7. 34.03

Page 144

1. $93\frac{1}{2}$
2. $30\frac{1}{4}$
3. 5060
4. yes
5. square; 1
6. 8.4; 18.9

Page 145

	a	*b*	*c*
1.	27	6	30
2.	36		5. 30.75
3.	30		6. $7\frac{7}{16}$
4.	7		7. 86

Page 146

1. 27 2. $6\frac{3}{4}$ 3. 1134 4. $24\frac{1}{2}$ 5. 7.2; 12.8 6. 2.56

Page 147

	a	*b*	*c*
1.	28.26	254.34	113.04
2.	50.24	12.56	78.5

	d	*r*	*A*
3.	42		1386
4.		14	616
5.	32		$804\frac{4}{7}$
6.		35	3850
7.	20		$314\frac{2}{7}$

Page 148

1. $12\frac{4}{7}$
2. 5544
3. 1386
4. 22176
5. .785
6. 28.26; 36
7. B; 15.7

Page 149

	a	*b*	*a*	*b*
1.	64	12	3. 16	40
2.	$28\frac{1}{2}$	30	4. $15\frac{3}{4}$	226.08

Page 150

1. 1728
2. 52
3. 44
4. 176
5. 4904
6. 352

Page 151

1. 24; 35
2. 9; 4.5
3. 10; $5\frac{1}{4}$
4. 20; 25
5. 28
6. 19
7. 12.75
8. 4; 25.12; 50.24
9. 11; 34.54; 94.985
10. 6; 3; 28.26

Page 152

	a	*b*	*c*
1.	36	64	$67\frac{1}{2}$
2.	706.5	502.4	1356.48
3.	$359\frac{1}{3}$	264	13860
4.	21	16	72

Page 153

	a	*b*	*c*
1.	210	27	49.5
2.	144		

3. 180
4. 40.96
5. $35\frac{7}{16}$
6. $8\frac{3}{4}$

Page 154

1. $157\frac{1}{2}$
2. 1296
3. 10368
4. 1728
5. 27
6. Jeff's; 4
7. many; 20; too many

Page 155

	a	*b*	*c*
1.	$6\frac{2}{7}$	$113\frac{1}{7}$	$1527\frac{3}{7}$

	d	*r*	*V*
2.	6		169.56
3.	14		615.44
4.		5	235.5
5.	10		157
6.		9	763.02

Page 156

1. 226.08
2. 113.04
3. 150.72
4. 452.16
5. 21703.68
6. Carol; 75.36
7. 4

Page 157

	a	*b*	*c*
1.	$183\frac{1}{3}$	1056	$128\frac{1}{3}$

	d	*r*	*V*
2.	4		12.56
3.	12		376.8
4.		7	153.86
5.	20		942
6.		9	508.68

Page 158

1. $3\frac{1}{7}$
2. $269\frac{1}{2}$
3. $28\frac{2}{7}$
4. A; 44
5. $2\frac{2}{21}$
6. $9\frac{3}{7}$
7. $12\frac{4}{7}$

Page 159

	a	*b*	*c*
1.	$5\frac{1}{3}$	14	$17\frac{1}{2}$
2.	306		
3.	198.2		

4. 1521
5. 221
6. $32\frac{73}{96}$

Page 160

1. 4374
2. 2156
3. 2128
4. B; 80
5. 1792
6. 3584
7. 14336

Page 161

1. 120
2. $283\frac{1}{2}$
3. 77
4. 27

	d	*r*	*V*
5.	28		7392
6.	20		8800
7.		21	34650
8.	12		113.04
9.		2	37.68
10.	16		803.84

11. $163\frac{1}{3}$
12. 26
13. $5\frac{5}{24}$
14. $5208\frac{1}{3}$

Page 162

1. 6120
2. 942
3. 314
4. 91272996.75
5. Marty; 46.44
6. pyramid; 15.48

Answers for SPECTRUM MATHEMATICS (Blue Book)

Page 163

1. 192
2. 343
3. 405
4. $38\frac{1}{2}$

	d	r	V
5.	24		3617.28
6.		8	3818.24
7.	20		3768
8.	14		616
9.		14	$2874\frac{2}{3}$
10.		3	198

11. 288
12. 260
13. 9
14. 490000

Page 164

	a	b	c	d
1.	27445	22.721	$\frac{3}{4}$	$4\frac{23}{30}$
2.	75.888	371 r8	$1\frac{1}{2}$	$1\frac{11}{16}$

			d	r	V
3.	96	152			
4.	$16\frac{2}{3}$	140	7. 28		12320
5.	25	$38\frac{1}{2}$	8.	2	88
6.	52	169			

Page 165

	a	b	c	d	e
1.	79	1112	4823	5629	99990
2.	110	662	24801	31204	246040
3.	6.5	6.13	4.88	4.366	45.322
4.	11.4	9.10	.646	32.647	33.727
5.	$\frac{4}{5}$	$4\frac{1}{2}$	$1\frac{1}{6}$	$2\frac{2}{9}$	$8\frac{13}{40}$
6.	$\frac{3}{4}$	9	$1\frac{7}{30}$	$10\frac{7}{12}$	$4\frac{11}{12}$

Page 166

1. 58758
2. 80585
3. 45.304
4. 590.924
5. $2\frac{1}{4}$
6. $4\frac{7}{8}$
7. $3\frac{3}{4}$
8. $5\frac{1}{8}$

Page 167

	a	b	c	d	e
1.	42	16	152	469	3583
2.	1788	3430	50659	1074	27508
3.	.2	2.2	.272	.889	2.93
4.	4.53	.536	4.88	39.387	27.4
5.	7.46	2.529	9.597	12.75	27.539
6.	$\frac{1}{4}$	$\frac{3}{5}$	$3\frac{1}{4}$	$1\frac{1}{3}$	$6\frac{1}{2}$
7.	$\frac{1}{8}$	$\frac{3}{14}$	$3\frac{5}{12}$	$3\frac{7}{12}$	$7\frac{21}{40}$
8.	$1\frac{23}{30}$	$1\frac{29}{40}$	$\frac{5}{6}$	$2\frac{37}{40}$	$6\frac{7}{18}$

Page 168

1. 3540
2. 18
3. 112.86
4. 38.996
5. $1\frac{1}{4}$
6. $\frac{1}{4}$
7. $6\frac{1}{4}$

Page 169

	a	b	c	d
1.	438	3852	21080	18492
2.	806	13206	92925	718284
3.	1.92	.078	7.12	2.496
4.	.0961	.13536	125.9496	50.2128
5.	$\frac{15}{28}$	$\frac{10}{21}$	1	$4\frac{1}{2}$

Page 170

1. 2310
2. 34650
3. .162
4. 44.774
5. .0336
6. 34
7. 2
8. $\frac{7}{12}$
9. $1\frac{1}{3}$

Page 171

	a	b	c	d
1.	24	34	134 r2	825 r5
2.	7	32	321 r10	703 r12
3.	2.9	.0018	2.06	4
4.	.5	450	.72	1.23
5.	$1\frac{5}{16}$	$1\frac{1}{2}$	8	$2\frac{2}{5}$

Page 172

1. 125; 2
2. 64
3. 119
4. 1000
5. .001
6. $1\frac{4}{5}$
7. 9

Page 173

	a	b	c
1.	$n=4$	$n=5$	$n=48$
2.	$n=78$	$n=42$	$n=15$
3.	$n=6$	$n=28$	$n=80$
4.	75	90	

	a	b
5.	3.6	7.2
6.	31	754
7.	71.25	294
8.	2.64	500
9.	49.5	125
10.	79.75	617.5

Page 174

1. 12
2. 90
3. 5
4. 18
5. 5.10
6. 693
7. 11
8. 29.70

Page 175

	a	b
1.	75	15
2.	40	3.15
3.	28	392
4.	200	120
5.	7	8
6.	30	$4\frac{1}{2}$

	p	r	t	i
7.				\$30
8.	\$640			
9.		4		
10.				\$151.20
11.			3	
12.	\$400			

Page 176

1. 1403
2. 6
3. 180
4. 30; 280
5. 128
6. 2
7. 6

Page 177

	a	b	c
1.	f	h	j,k,l
2.	e	i	j,k,l
3.	a	g	j
4.	b	h	j,k
5.	d	h,i	j
6.	c	g	

7. Have your teacher check your work.

Page 178

Have your teacher check your work.

Page 179

	P	A
1.	30	54
2.	32	64
3.	15	$13\frac{1}{2}$
4.	$11\frac{1}{6}$	$7\frac{7}{12}$
5.	27	
6.	7	

7. $12\frac{3}{4}$
8. 30

Page 179 (*continued*)

	d	r	C	A
9.		5	31.4	78.5
10.	24		75.36	452.16
11.		1.2	7.536	4.5216
12.	40		125.6	1256
13.		2.7	16.956	22.8906

Page 180

1. 24
2. 30
3. $4\frac{2}{3}$

	d	r	V
4.	42		20790
5.		$3\frac{1}{2}$	308
6.	2		$6\frac{2}{7}$
7.	8		150.72
8.		5	157
9.	3		28.26
10.			$114\frac{1}{3}$
11.			1900
12.			$5\frac{5}{24}$

Page 181

1. 364; 6912
2. 54
3. 616
4. $97\frac{1}{2}$
5. 50.24
6. 3.14
7. 3840
8. 4000

Page 182

	a	b	c	d
1.	37.466	11105	$4\frac{7}{10}$	$6\frac{3}{8}$
2.	234720	31.6	$\frac{2}{3}$	$\frac{1}{6}$
3.	21	4.51		
4.	9	1600		

	d	r	C	A
5.		3	18.84	28.26
6.	16		50.24	200.96
7.	2280			
8.	7650			

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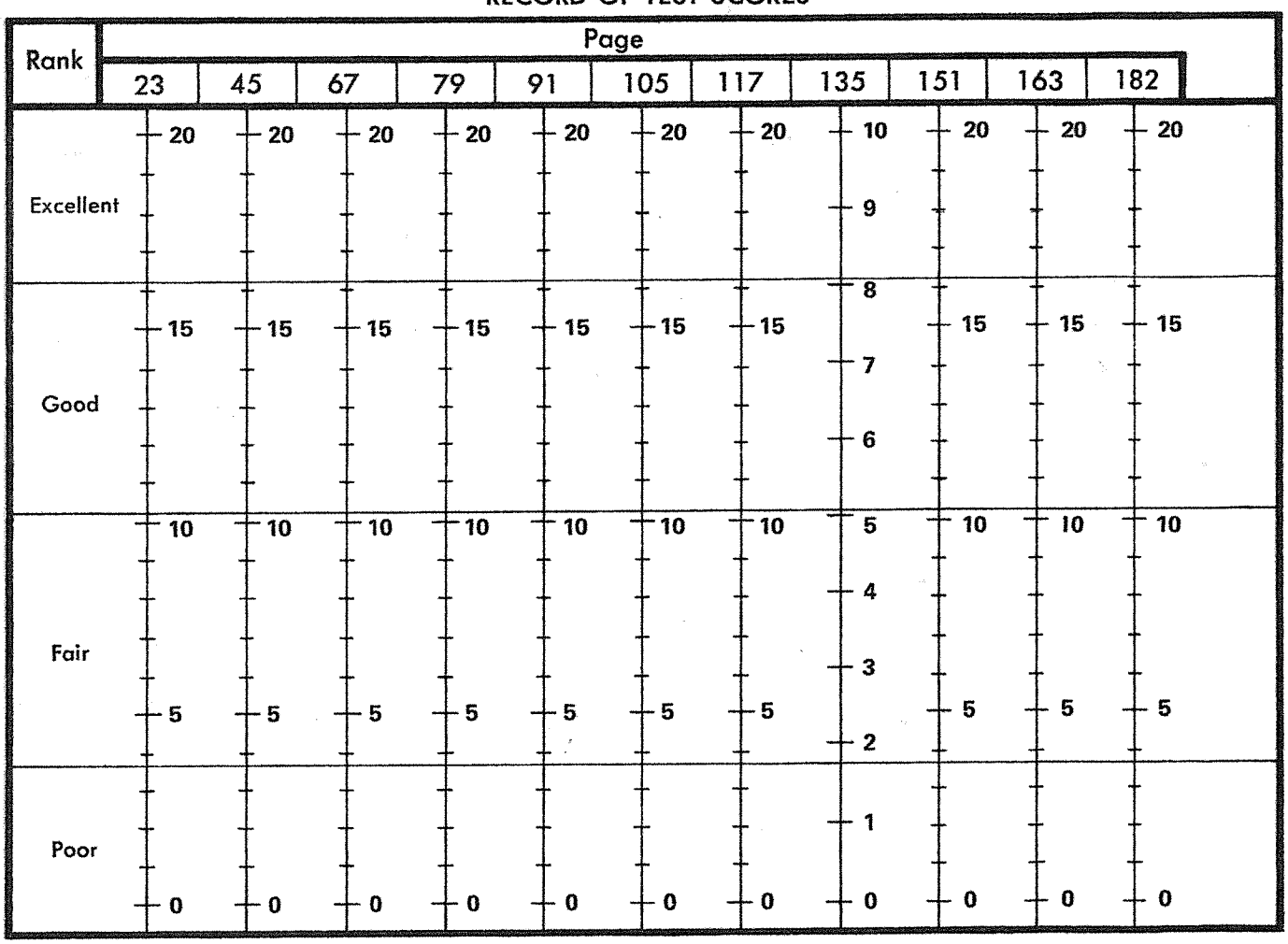

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(2) on that vertical scale, draw a • at the mark which represents your score.

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